Government of Madras.

PUBLIC WORKS DEPARTMENT.

IRRIGATION.

Recd.	1915.	*Enclosures*	
Regd.		*Spare copies*	

with enclosures

G.O. No. 273 I., 4th June 1915.

N. P.

Rules for the issue of water from the Periyar lake

Issuing as an experimental measure for the current year certain — with reference to the Hon'ble Mr. Gillman's recommendations on the working of the Periyar system.

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

I

G.O. No. 153 I., dated 25th March 1914.

ABSTRACT.—Appointing the Hon'ble Mr. H. F. W. Gillman, I.C.S., to conduct an enquiry into the working of the Periyar Irrigation system.

II

Extracts of paragraphs 5 and 8 (i) of the Hon'ble Mr. Gillman's letter Ref. No. 4305, dated 11th September 1914.

5. QUESTION (c).—*The supply which can usually be distributed from June to August to the area to be irrigated and the reasons for considering this supply to be adequate or inadequate.*—Diagrams are enclosed showing the daily lake levels and the discharge over the first drop below the Peranai regulator from June to August in the past three seasons 1911–1913; similar diagrams are also furnished for the discharges over drop No. 1 of the 4th and 9th, the two most important branch channels. The duties have also been worked out, assuming that the total area was under cultivation from the commencement. This of course was not the case as for the first ten days at least of each season water is only required for seed-beds. The information contained in the diagrams may be thus summarised :—

1911.—Water reached the canal on June 7th and for the first twelve days there was considerable variation in the supply, the drop from 15th to 19th being due to stoppage of supply from the lake owing to freshes. From June 19th the supply increased rapidly and remained ample until the end of the season, the average duty being between 40 and 30 until July 13, and between 25 and 20 for the rest of the season.

1912.—Water reached the canal on the 18th June and on the 21st the duty was less than 60. From then until July 2nd the duty was nearer 50 than 60, from July 2nd until July 19th it was between 50 and 40 and thereafter until the end of the season it was greater than 30 for only two days.

1913.—Water reached the canal on June 29th, the lateness of supply being due to works at the lake which prevented the tunnel being opened earlier. Except for four days, July 5th to 8th, when the supply ran very low owing to closure of the tunnel in consequence of a fresh, the supply was well maintained throughout the season and the duty did not go higher than 40, the average being about 30.

The 4th branch channel usually started at a duty of 90 and worked down to a duty of about 40. It may be noted that the supply in this channel was greater in 1913 than in previous years, due to an arrangement made in that year for raising the water-level at the head of the channel and thereby increasing the supply passed down it.

In the 9th branch channel, except on the occasions of short supply above noted, the average duty was 25—30. This channel which is the last in the double-crop area is used as the means of disposing of excess water received from the river. This explains the variations in the discharges and also the lowness of the duty.

The general conclusion that may be drawn from the diagrams is that there is no difficulty in providing a discharge of 600 cusecs at the first drop below Peranai during the kodai season, and it must be remembered that this supply can be increased, because the supply let out from the lake is far less than the maximum available. Assuming, however, that the discharge is maintained at 600 cusecs, and that there is no difficulty in working to a duty of 60, the supply would be sufficient for 36,000 acres. This area is far in excess of the present average of 22,000 acres and approximates to the maximum of 40,000 acres.

There can be no question therefore that the supply is more than ample for present and could even provide for possible requirements. This conclusion is confirmed by the results of my inquiry and inspections. In tract A water is abundant everywhere. In tract B it was found that the supply was a good deal more than was requisite, and that water was being sent down to areas where no kodai was raised, while it might have been more usefully employed in giving a better supply to areas under kodai, which were more difficult of access. Of course the surplus water finds its way into tanks and is useful for starting the kalam crop, but after all this water is meant for the kodai and not for the kalam crop. The object to be aimed at is a distribution proportionate to the "kodai"-growing areas, and arrangements are being made to furnish the Executive Engineer yearly with statistics showing the cultivation under each sluice so that the water-supply may be regulated according to this area and not according to the irrigated area as hitherto.

I enquired carefully into all complaints of defective supply and made inspections, with the result that I found three tracts where the complaint was well-founded. They are—

(a) *Samayanallur and Paravai villages.*—These villages receive an inadequate supply throughout the season for want of a direct channel from the main canal. Their present supply is derived from the Kallivelipatti distributary and passes to them along an old drainage channel (odai), which runs through inam villages in the upper part of its course. As there are no proper regulating arrangements, the inam villagers cross-bund the odai and intercept an undue share of the water. The Samayanallur and Paravai villagers ask that a new sluice should be built in the main canal to discharge into the odai, and that the flow in the odai should be reserved for them, separate arrangements being made for the supply of the inam villages. Their request deserves consideration, as the supply which they receive under existing conditions is inadequate.

(b) *Thenur village.*—Here the supply is generally inadequate and particularly so during the kodai season, as the village lies at the tail end of the first branch channel, the water of which is intercepted by villages higher up, notably Sholavandan. When the improvement estimate, which has been worked out for this branch channel and is now under execution, has been completed, it will be possible to send a better supply down to Thenur, as the Sholavandan ryots will be prevented from using the channel water. Thenur, like other villages lying on the north bank of the Vaigai, used to receive its supply by a channel taking off from the river and it is a matter for regret that this channel and several others, *e.g.*, Paravai and Kunnathur, have been allowed to fall into disrepair and become useless since the introduction of the Periyār.

(c) *Pulampatti distributary.*—Is a high level channel taking off from the main canal, and owing to the low depth of water in the canal during the kodai season, the supply through the head sluice in that season has always been deficient. The head sluice was widened last year and the distributary improved, but there are still complaints of shortage and it seems advisable to further widen the sluice.

The importance of a steady supply from the opening of the lake during the ploughing of the land for kodai and until the crop is transplanted was impressed on me by a number of witnesses, and I agree with them that sudden stoppages should be avoided during this period, especially during transplantation, so that the acreage under crop may not be affected, or loss caused to the ryots. On at least two occasions in the past two years stoppages which could have been avoided have occurred, owing to the lake being closed during a fresh in the Vaigai or Suruliyar and not being opened in time to reach the main canal before the flood water subsided.

8. I have now dealt with all the questions referred to me, and propose, in conclusion, to touch on a few matters which came under discussion in the course of the enquiry and seem to be worthy of record. They are the following:—

(i) *The most suitable dates for opening and closing the lake.*—The date of opening has varied considerably during the past ten years, being once as early as 26th April and once as late as 25th June, once in the last week of May, thrice in the first week and four times in the third week of June. It is desirable that these fluctuations should be avoided as they disconcert the ryot. They have been due mainly to the necessity of getting through work at Periyār during the lake closure, particularly the watershed cutting, which was the cause of the two instances of exceptionally early and late closing. It seems advisable to dispel an erroneous popular belief that the date of opening depends in some way on the amount of water in the lake, and to state that not only has the lake never been unduly depleted before closure, but that it would have been possible in any year to open the lake at any date in June. The lowest level at which the lake was closed during the past ten years was 118·50, which means a reserve of 7 feet, enough to carry on from the subsequent opening until the monsoon began at the lake even if the lake-supply was not increased in the meantime. After the burst of the monsoon the lake rises slowly during June and not only fills but generally surpluses in July. From August until the north-east monsoon commences in October or November the lake usually falls steadily, and as this is the period of greatest demand scarcity is occasionally felt during it. The conclusion to be drawn from these facts is that it is advisable to open early in June, as it is obviously economical to draw off water from the lake while it is rising and to get kodai cultivation well advanced during this period. The ryots' opinions on this question were specially invited during the enquiry and the following information was gathered. The ryots in block B favour an early opening not later than 10th June. They grow a short kodai crop (aruvatham kodai) occupying $3\frac{1}{2}$ months from seed to harvest and like to reap it early in October, well before the north-east monsoon sets in, so as to get the full benefit of these rains for their long kalam crop (sirumaniam). The ryots in block A, on the other hand, are more concerned to get a late closing date about 31st March and would be content with a late opening on 1st July. The reasons are that they raise two "kar" crops, each of $4\frac{1}{2}$ months duration, and that, as they consider December to be the best month for transplanting the second crop, they have plenty of time to harvest the crop before that month, even with a late opening. These ryots are very leisurely about their cultivation: they waste time in starting their first crop, and they do not usually trouble to reserve land for the seed beds of their second crop. The result is that the transplantation of their second crop is made about Christmas and carries on into January. It would be possible for them to get the transplantation done a month earlier without difficulty to themselves or prejudice to the outturn, and to accommodate themselves to a closing about 15th March. The objection to the late closing, which they ask for, is that the storage from the north-east monsoon may not always suffice for so long.

On these considerations the most suitable date for opening is from 1st to 10th June—not later than 10th—, and for closing about 15th March. The date of closing may be notified at the same time as that of opening.

III

Memorandum No. 6283/14 A-1, dated 16th October 1914.

With reference to G.O. No. 153 I., dated 25th March 1914, the Hon'ble Mr. H. F. W. Gillman has submitted his report on the working of the Periyār Irrigation system. One of the questions dealt with is—

"the supply which can usually be distributed from June to August, to the area to be irrigated and the reasons for considering this supply to be adequate or inadequate."

In submitting his proposals on the above, Mr. Gillman has forwarded diagrams showing the daily lake level and the discharge over the first drop below the Peranai regulator from June to August in the past three seasons (1911—1913) and also the

discharges over drop No. I of IV and IX branch channels. The conclusion arrived at by him is that a discharge of 600 cusecs may be provided at the first drop during the kodai season and that the supply be given from any date between the 1st and 10th June. He considers that with a duty of 60, the supply would be sufficient for an extent of 36,000 acres, which is far in excess of the average for the last three faslis (22,000 acres). As water is being wasted, he proposes to supply according to the extent of cultivation under each sluice and not according to the total irrigated area and to make necessary arrangements to furnish the Executive Engineer annually with statistics showing the cultivation under each sluice.

2. It is not certain whether the above supply has to be increased to the full discharge required for the kalam crop and what that discharge should be. Presumably the discharge required will be that issued in more recent years, which is greater than that issued in previous years. Further the rate of issue considered necessary in the dry months (February and March) is not known. The Superintending Engineer, VI Circle, is requested to obtain the above information as regards the issues required for various seasons from Mr. O'Brien. These should be compared with the actuals for the purpose of testing the effect of applying Mr. Gillman's proposals and a report summarising the results arrived at submitted to this office.

(By Order.)

F. E. MORGAN,
Asst. Chief Engineer for Irrigation.

To the Superintending Engineer, VI Circle.

IV

Letter—from C. MILDRED, Esq., A.M.I.C.E., Superintending Engineer, VI Circle.
To—the Chief Engineer for Irrigation.
Dated—Trichinopoly, the 19th November 1914.
No.—1671-C E/655-G.

With reference to your No. 6283/14 A.–1, dated 16th October 1914, I have the honour to inform you that Mr. O'Brien does not quite understand what information is asked for and requests further instructions. I am unable to instruct him and request you will kindly do so.

It is not clear in what terms the issues required for various seasons, is to be expressed and whether you require the issue at the head of the system, or at the distributary sluices and whether for the kalam or the kodai crop or both.

V

Memorandum No. 6283/14 A-2, dated 27th November 1914.

The Chief Engineer for Irrigation has the honour to observe that what he wished was that the Superintending Engineer should examine the effect of introducing Mr. Gillman's proposals on the quantities of water in the Periyār lake by means of working tables. These proposals are to open the lake yearly on a fixed date — 10th June — and to issue water sufficient to furnish 600 cusecs at the first drop on the Peranai main channel throughout the kodai season.

2. No details, however, are given by Mr. Gillman in his report as to when water is required for the kalam crop, when the issue for this should commence and what quantities of water have to be passed over the first drop, half month by half month, from the commencement of the kalam crop to the closing down of the lake for the season. It was considered that Mr. O'Brien would be able to furnish a good estimate on which to base computations for the draw off required for the cultivation from the commencement of the kalam crop. A reference was therefore made to the Superintending Engineer to examine the working of Mr. Gillman's proposals (*i.e.*) to examine by working tables if the lake under the conditions of inflow actually experienced and the conditions of draw off which would be required in future under Mr. Gillman's proposals, could have in past years been worked without failure and if not what extent of failure would have been realised on a bad year's working under such conditions.

3. If the necessary details as regards draw off are furnished, the actual working tables will be prepared in this office.

(By Order.)

F. E. MORGAN,
Asst. Chief Engineer for Irrigation.

To the Superintending Engineer, VI Circle.

VI

Memorandum No. 6283/14 A-3, dated 5th January 1915.

The Chief Engineer for Irrigation has the honour to invite the attention of the Superintending Engineer, VI Circle, to this office Memorandum No. 6283/14 A-2, dated 27th November 1914, calling for some information in connection with the Hon'ble Mr. Gillman's report on the working of the Periyār Irrigation system and to request that the Superintending Engineer will be so good as to state what delays the disposal of the reference and when the information therein called for will be furnished.

The matter is very urgent.

W. M. ELLIS, Col., R.E.,
Chief Engineer for Irrigation.

To the Superintending Engineer, VI Circle.

VII

Letter—from M. O'BRIEN, Esq., Executive Engineer, Madura Division.
To—the Superintending Engineer, VI Circle.
Dated—the 18th December 1914.
No.—1292-S.E.

I have got all the records with me and I am preparing a reply but I am still not quite clear as to what exactly is wanted. I shall send a report in a few days, on what seems to me to be required.

No. 73-C.E./655, dated 9th January 1915.

Copy forwarded to the Chief Engineer for Irrigation with reference to his Memorandum No. 6283/14 A-3, dated 5th January 1915.

The report is still awaited and the Executive Engineer has been asked to send the report at the earliest possible date or to explain cause of delay.

C. MILDRED,
Superintending Engineer, VI Circle.

VIII

Letter—from M. O'BRIEN, Esq., Executive Engineer, Madura Division.
To—the Superintending Engineer, VI Circle, Trichinopoly.
Dated—the 13th January 1915.
No.—33-S.E.

With reference to your No. 9911/655, dated 4th December 1914, I have the honour to report that I find it very difficult to give an estimate of the quantity of water that will be required for the kalam crop owing to the fact that the irrigation under the Periyar system depends not only on the supply from the lake, but also on the independent supply given by the Vaigai and the supply from local rainfall. Of the 110,589 acres of irrigation under the Periyār Main channel, 60,838 are under tanks all of which have their own catchments and most of which derive supply from local rainfall, when there is any, as well as from the Periyār lake. They also derive supply from river freshes as it is the custom to pass as much of these as possible into the main channel, and thence down the branch channels, and any excess water that cannot be used in the branch channels at such times passes on to the tanks, they being so situated that they receive it automatically. The quantity of water required from the lake at any time will, therefore, to a great extent, depend on the supply in the tanks at the time, and that supply is likely to vary very much in any period from year to year, as the above two factors, local rainfall and river freshes, are uncertain. They cannot be left out of account, as I do not think the

supply from the lake alone would be sufficient to supply the area in any year without the help given by them. I could give an approximate estimate of the quantity of water that would be required on drop No. I of the main channel during an average kalam season, but this would not, I take it, be much help in deciding the question at issue, as there is no fixed relation between the supply let out of the lake and the supply obtained at drop No. I. For example, full supply from the lake estimated to be 1,257 cusecs gave on drop No. I on the first half of September 1914 a little over 1,000 cusecs on the average. In September 1913 it gave only 900 cusecs during the first half of the month, and during the most of the month it was seldom more than 960 to 970 cusecs. In September 1912, on the other hand, it gave generally more than 1,100 cusecs, sometimes 1,400 cusecs and often more than 1,200 cusecs.

2. During the past three years the kalam season has begun on or about August 20th, that is, water has been let into the single crop area on that date. If the opening of the kodai season is fixed at June 10th then the opening of the kalam season might be advanced to 15th August. The ryots would like it to begin earlier, but I do not think it would be safe to fix it any earlier, owing to the long spell of every dry weather both in the lake catchment and in the irrigated area, till the north-east monsoon begins. This is really the crucial time under the system and the only time in which there is likely to be any trouble. The lake has to be fairly full at the beginning of the period to last out, and, if it is, even though the north-east monsoon is delayed, all the area can be kept going. In 1911, for instance, the lake level at the beginning of the kalam season was 149·30. There was very little rain in the catchment during August, September, October and early part of November, and there was little or no rain around Madura till November 20th, the monsoon being delayed till then. Though the lake level fell to 132·85 on October 18th, there was no failure of crop though there was, at times, considerable deficiency of supply and considerable trouble in distributing what there was in such a way as to crops going. Transplantation at the tail end in Mēlūr taluk was also delayed and some of it was not done till the end of November. If the north-east monsoon had been a failure in that year most of the crop would have been lost. If it had been a failure around Madura but had been up to average on the lake catchment, it is hard to say what would have happened. There would probably have been failure under the outlying tanks. Last year was another bad year as the lake level at the beginning of the kalam season was only 145·80 and it had dropped to 129·05 by October 26th, rising from that on till the middle of November when it was 144. It then bagan to drop a little every day and by the end of November it was 141·90. It rose again during December reaching a level of 145·75 on December 24th. By the end of the season which was unduly prolonged till March 31st owing to late opening it had fallen to 118·50. But for the unusual rain in December, it would not have been possible to have kept it open so long and some of the second crop in the upper reaches would have failed, a lesson to the ryots in the upper reaches who always delay their second crop. It should, I think, be laid down as a general invariable rule that the lake should be closed exactly nine months after the date of opening, that is, if it is opened on June 10th it should be closed on March 10th. The ryots in the upper reaches must learn to suit their cultivation to this latter date.

3. From the beginning of the kalam season till the monsoon rains begin in Madura or till river freshes begin, the lake head sluice is as a rule kept fully opened. There may be reductions for a day or two, but it is safer to disregard these. When the rains are likely to begin and when the draw-off is likely to be reduced, it is impossible to say, but it might be assumed that there will be no reduction till October 20th, though the supply down from the lake is often reduced much earlier. What supply will be required from then till about December 10th, it is impossible to say. During the rest of December, full supply will ordinarily be required, though it would, in many years, be possible to do with less. From the end of December to say January 15th 2·25 on the measuring weir should ordinarily be sufficient. This year we have ample supply with 2·00 on the measuring weir in this period, but this is not a normal year, all the tanks being even now full. The supply required after January 15th will depend on the date in which harvest begins in the kalam area.

Ordinarily I should say 2′ to 2·25′ should be sufficient till the end of the month. During February 2 ft should be sufficient up to say the 10th. From the 10th to the end of the month 1·80 should be ample and generally less could be managed with. During March 1·5′ should be sufficient as there will then be very little area under crop.

4. I think the season 1913-14 might be taken as an example of a poor year and the supply passed out of the lake during the period, August 18th to October 26th, might be taken as the supply required during that period in a bad year. In fact, I think, the same assumption might also be made for the period October 26th to November 30th. The conditions during December in that year were abnormal and it would not be safe to make any deduction from the supply passed down during that month. It would be safer to assume that full supply would ordinarily be required after about the 10th. The same is the case as regards January, February and March 1914 as, during that period, water was supplied to Sivaganga and tanks on the south side of the Vaigai and more water was passed down than was actually required for the Periyār area proper. It would be safer to assume that the supply I have indicated above will meet requirements during those months.

5. It may be noticed that the supply that can be drawn from the lake automatically drops when the lake falls below a certain level and this has to be taken into account when working out the quantities discharged.

In 1909-10 the gauge reading on the weir when full supply was being discharged was 2·80 and this reading could not be obtained when the lake fell below 146·60. In 1910-11 the gauge reading on the weir at full supply was 2·60, the reduction being due to alterations in the approach channel to the weir. This reading could not be obtained when the lake fell below 145·40. In 1911-12 the reading at full supply was also 2·60 and this reading could not be obtained when the lake fell below 144·10. In 1912-13 the full supply reading fell to 2·45 and this reading could not be obtained when the lake fell below 142·60. In 1913-14 the full supply reading was also 2·45 and it could not be obtained when the lake fell below 140·45. In 1914-15 2·45 ft. was obtained with a lake level of 139·50.

6. I regret the delay in submitting this report. The delay is due to the fact that I found the question a difficult one to deal with, and regret that, even now, the report is not more definite.

No. 145-C.E./655, dated 19th January 1915.

Forwarded to the Chief Engineer for Irrigation, Madras, in reply to his No. 6288/14-A-2, dated 27th November 1914.

C. MILDRED,
Superintending Engineer, VI Circle.

IX

Telegram—from the Secretary to Government, Public Works Department.
To—the Executive Engineer, Madura Division and the Collector of Madura.
Dated—the 31st May 1915.
No.—T. 28-O.

T-28-O. A trial is to be made for current year following Mr. Gillman's recommendations and Periyār lake to be opened on 13th June and steady supply at Peranai maintained without interruption throughout kodai season. Notices should be issued at once to ryots concerned. Written instructions for regulation of this year will follow.

Order—No. 273 I., dated 4th June 1915.

In his report on the working of the Periyār Irrigation system, the Hon'ble Mr. Gillman proposes—

(i) That the most suitable dates for the opening and closing of the Periyār lake is from 1st to 10th June—not later than the 10th for the opening and 15th of March for closing.

(2) That 600 cusecs should be supplied over the first drop at Peranai from June to August.

2. The proposals have been carefully considered by the Chief Engineer for Irrigation, and the Government direct that with a view to maintain a steady supply over the first drop at Peranai during the kodai season the following rules of regulation should be observed as *an experimental measure* for the current year only :—

(*a*) Issues from the Periyār lake will commence on 13th June and will be maintained at the rate of 500 cusecs until 28th June. The rate of issue will then be increased to 750 cusecs which will be maintained till 18th August. From that date the usual long crop issues will commence and the system of regulation hitherto in force will be maintained.

(*b*) The lake will be closed for issues on the 13th March.

(*c*) In times of heavy rainfall in the irrigated area or of floods in the Vaigai the Executive Engineer is authorised to alter regulation at his discretion to meet these special circumstances.

3. The following telegram has been sent to the Executive Engineer, Madura Division and the Collector of Madura :—

"T-28-O. A trial is to be made for current year following Mr. Gillman's "recommendations and Periyār lake to be opened on 13th June and steady supply at "Peranai maintained without interruption throughout kodai season. Notices should "be issued at once to ryots concerned. Written instructions for regulation of this "year will follow."

(True Extract.)

W. M. ELLIS, Col., R.E.,
Secretary to Government, P.W.D.
(Irrigation Branch).

To the Superintending Engineer, VI Circle.
,, Collector of Madura.
,, Board of Revenue (Revenue Settlement),
,, Revenue Department,
Copy to the Executive Engineer Madura Division.

PUBLIC WORKS DEPARTMENT
(IRRIGATION BRANCH).

NOTES CONNECTED WITH G.O. No. 273 I., DATED 4TH JUNE 1915.

[SUBJECT.—*Periyār irrigation system.*]

From the Hon'ble Mr. H. F. W. Gillman, I.C.S., Member of the Board of Revenue, Ref. No. 4305-*A*/14-1, *dated* 11*th September* 1914.

* * * * *

I have not been able to go into this report thoroughly before going on tour as I start to-morrow and the file only came to me to-day and in order to save time the case is forwarded to Revenue without any remarks.

2. While the file is under disposal by Revenue the actual working during the worst years of which there is record of the proposals made by Mr. Gillman for dates of opening and closing the Periyar lake (viz., 10th June opening 15th March closing) should be examined.

The effect on the water storage of omitting closure of the tunnel sluice during local freshes in June and July should also be investigated with reference to actuals of past years.

W. M. ELLIS—6-10-14.

T has brought me this case in Madras and represented that the exact basis of discharges on which examination of the reservoir working is to be made has not been furnished.

2. Mr. Gillman (speaking from memory) proposed that for the kodai crop 600 cusecs over the first drop would suffice and should be issued from 10th June. It is not certain when this amount has to be increased to the full discharge required for the kalam crop and what that discharge should be.

Presumably the discharge required will be that issued in more recent years which is greater than that which was issued formerly.

Further what rate of issue is considered necessary in the dry months, February—March.

It is considered that the Executive Engineer (Mr. O'Brien) should be consulted as regards the issues required for various seasons which should be applied to actuals for the purpose of testing the effect of applying Mr. Gillman's proposals which should be briefly summarised.

This reference may be made as a preliminary to the examination of the effect of introducing Mr. Gillman's proposed rules.

W.M.E.—9-10-14.

With reference to Chief Engineer for Irrigation's note above a draft memorandum to the Superintending Engineer, VI Circle, is submitted for approval.

M.S.—12-10-14.

P.K.S.—12-10-14.

F. E. MORGAN—14-10-14.

[Memorandum issued as No. 6283/14-A/1, dated 16th October 1914.]

From the Superintending Engineer, VI Circle, dated 19th November 1914, No. 1671 C.E./655 G.

Submitted for orders.

M.S.—24-11-14.

R.S.—24-11-14.

I think Chief Engineer for Irrigation referred to effect on Periyar lake.

F. E. MORGAN—24-11-14.

What I wished was that the Superintending Engineer should examine the effect of introducing Mr. Gillman's proposals on the quantities of water in the Periyar lake by means of working tables.

Mr. Gillman's proposals are to open the lake yearly on a fixed date 10th June and to issue sufficient water to furnish 600 cusecs at the first drop on the Peranai main channel throughout the kodai season.

2. No detail however is given by Mr. Gillmam in his report as to when water required for the kalam crop, when the issue for this should commence and what quantities of water have to be passed over the first drop half month by half month from the commencement of the kalam crop to the closing down of the lake for the season.

It was considered that Mr. O'Brien would be able to furnish a good estimate on which to base computations for draw off required for the cultivation from the commencement of the kalam crop and the reference was therefore made to the Superintending Engineer to examine the working of Mr. Gillman's proposals meaning by this to examine by working tables to ascertain if the lake under the conditions of inflow actually experienced and the conditions of draw off which would be required in the future under Mr. Gillman's proposals could have in past years been worked without failure and if not what extent of failure would have been realised on the bad years working under such conditions.

If the necessary details as regards draw off are furnished the actual working tables will be made in this office.

W. M. ELLIS—25-11-14.

A draft memorandum to the Superintending Engineer in the light of Chief Engineer for Irrigation's remarks above is submitted for approval.

M.S.—27-11-14.

P.K.S.—27-11-14.

F.E.M.—27-11-14.

[Memorandum to the Superintending Engineer, VI Circle, No. 6283/14-2, dated 27th November 1914.]

A proof copy of the current and notes files regarding the Hon'ble Mr. Gillman's report on the Periyar enquiry, is put up. The file is submitted for orders with reference to the portion marked A in Revenue Secretary's note, dated 15th November 1914, on page 10 of the note file.

This is being dealt with in another file and duplicates are being sent to-day.

F.E.M.

G.V.—10-12-14.

P.K.S.—10-12-14.

F.E.M.—10-12-14.

May await diagrams and maps.

W.M.E.—10-12-14.

Map not received yet.

F.E.M.

The diagrams returned from Revenue are put up.

G.V.—19-12-14.

R.S.—19-12-14.

F.E.M.—19-12-14.

From the Superintending Engineer, VI Circle, dated 9th January 1915, *No.* 73 *C.E.*/655.

The Superintending Engineer states that the report called for in Memorandum No. 6283/14-2, dated 27th November 1914, is still awaited from the Executive Engineer. The case may lie over for a fortnight more.

B.G.R.—18-1-15.

P.K.S.—18-1-15.

W. M. ELLIS—19-1-15.

From the Superintending Engineer, VI Circle, dated 19th January 1915, *No.* 145 *C.E.*/655.

Submitted.

B.G.R.—22-1-15.

P.K.S.—22-1-15.

The Executive Engineer's letter does not help much but I think we have practically enough information to get out working tables.

F. E. MORGAN—22-1-15.

The effect of maintaining 600 cusecs at drop No. 1, from June 10th to August 18th, has been worked out for eight bad years and the results are given below :—

Year.	Actual level on 18th August.	Level after maintaining 600 cusecs (August 18th).	Extra draw off from lake.
			M.C.FT.
1898	130·65	137·66	*Nil.*
1902	136·35	142·96	*Nil.*
1905	134·15	139·09	*Nil.*
1906	135·90	132·67	+ 793
1908	134·90	140·71	*Nil.*
1910	143·30	139·60	+ 991
1911	149·80	151·14	*Nil.*
1913	145·90	140·92	+ 1,369

1906.—Assuming that the issues subsequent to August 18 *would be the same as the actuals* then the extra draw off would have reduced the lake level in October from 137·00 to 133·76, which is not an exceptionally low level.

See the tables drawn up in connection with power scheme.

Issues in 1907 closed on March the 18th with a lake level of 131·35. This level would have been reduced by the extra draw off to 127·79. The lake has been closed at much lower levels than this. In June 1907 the lake opened at 134·60, which owing to the extra draw off in 1906 would have been 131·21, which is a safe level for opening and the lake surplused in August 1907.

1910.—The extra draw off would not have had any effect in 1910, the lake level was high subsequent to August 18th and the lake surplused in November.

1913.—The lake would have reached a low level, 120·95, at the end of June but the extra draw off of 1,369 m.c. ft. would not have been felt until the end of the season.

The lake closed either in April or on 31st March 1914.

On 31st March the lake level was 118·50 and the extra draw off of 1,369 m.c.ft. would have reduced this to 110·16, an impossible level for issues as the head of the cutting is 110·34.

On March 15th the level was 122·15 and the extra draw off would have reduced that to 114·77.

The effect of maintaining 600 cusecs from June 10th to August 1913 would have been to close irrigation at least 15, and probably nearer 21 days, earlier than it actually did.

It is highly probable that in actual working we should use a considerably larger quantity of water in attempting to maintain 600 cusecs than has been estimated in the tables.

F. E. MORGAN—8-3-15.

I cannot see any instructions for drawing up these tables.

The "Rules" given provide for issues through the tunnel (column 9) as under—

(*a*) If actual discharge through tunnel is less than $\frac{5}{4}$ of 600 cusecs and actual discharge over drop is less than 600 cusecs—

Discharge through tunnel to be—

Actual recorded discharge (column 5) + $\frac{5}{4}$ of deficiency of discharge over drop ($\frac{5}{4}$ $\{$ column 8 — column 7.) $\}$

(*b*) If actual discharge over drop exceeds 600 cusecs and actual discharge of tunnel less than $\frac{5}{4}$ of 600 cusecs—

Discharge through tunnel to be—

Actual discharge through tunnel (column 5).

(*c*) If actual discharge through tunnel is greater than $\frac{5}{4} \times 600$ cusecs: or if $\frac{5}{4}$ $\{$ column 8 — column 7 $\}$ is greater than $\frac{5}{4} \times 600$ cusecs—

Discharge through tunnel to be—

$\frac{5}{4}$ of 600 cusecs (column 6).

2. The application of the above rules presuppose a certain amount of power of forecasting the contributions actually in the past realised from the lower catchment which will not exist. And are not in my recollection in accordance with instructions, at any rate they are not in accordance with my intentions.

Further the rules have not been applied correctly to the tables as if they had the figure in column 9 (Demand on Reservoir) could never have been less than actual discharge through tunnel (column 5) or $\frac{5}{4}$ of 600 cusecs (column 6) whichever was less.

In the table column 9 is frequently much less, for instance,

1898	23rd June. 24th " 26th to 28th June. 30th June.
1905	6th July. 7th " 8th to 18th July. 29th July. 31st "

3. Tables must be revised with new columns 9 to 12, in view of the impossibility of forecasting a minimum discharge of 600 cusecs from tunnel to be allowed daily from 13th June to 18th August.

These discharges are to be allowed when there was in actual experience *no loss in transmission* on the discharges actually passed on corresponding days.

When there was a loss the issues from tunnel to be $\frac{5}{4}$ of 600 cusecs. Thus the discharges will be either 600 or $\frac{5}{4}$ of 600 daily and by counting up days of loss each half month and balance of days monthly tables can be drawn from existing tables without any daily computation having to be made. This should be done at once.

W. M. ELLIS—20-3-15.

(i)

Demi-official—from the Hon'ble Colonel W. M. ELLIS, R.E., Chief Engineer for Irrigation.

To—M. O'BRIEN, Esq., Executive Engineer, Madura Division.

Dated—Madras, the 20th March 1915.

It is under proposal to introduce tentatively for this year Gillman's proposed rule for opening Periyar 10th or 15th June giving a supply of not less than 600 cusecs at drop No. 1 up to 20th August and closing the lake on the 15th March.

The doubtful point as regards working tables for forecasting how far this is safe is the want of knowledge of losses in transmission up to 20th August and a year's working will do much to give us data for this if this season happens to be a dry one.

It would be very desirable if practicable to measure the discharges on a weir somewhere about Kuruvunuth.

This would not only allow us to count in the yield of the catchment between the tunnel and weir site but would also I fancy give us more reliable discharges than the weir below the tunnel mouth gives.

Could you manage to get up a gauging weir at the foot of the ghaut suitable for gauging discharge up to about 800 cusecs between June and August. Perhaps a plank weir which could be removed in case of flood could be fixed at Kuruvunuth bridge or elsewhere. If you can do this, please take steps at once, if not please let me know. I am writing to you direct to save time and send a copy to Mildred.

(ii)

Demi-official—from M. O'BRIEN, Esq., Executive Engineer, Madura Division.
To—the Hon'ble Colonel W. M. ELLIS, R.E., Chief Engineer for Irrigation.
Dated—Madura, the 22nd March 1915.

Your demi-official of 20th instant received today. I do not quite understand why it should be considered necessary to pass down the full 600 cusecs from the very beginning. For at least a fortnight or three weeks after opening much less than this should do as seedlings have to be grown in most cases only after water is let down and in very few cases can seedlings be grown beforehand. We have hitherto been in the habit of letting down only a small quantity to start with and then increasing it gradually as the cultivation progressed. It is I admit a good idea to give a good supply to start with to encourage people to cultivate and I think in the past we have generally started with too low a supply, but I think the full supply of 600 would be too much to start with and much of it would be wasted or passed into tanks where also much of it would be lost in the very dry season we have then down here.

Regarding the weir near Kuruvunuth, I cannot say offhand if there is a suitable site but I believe there is not Perhaps the Kuruvunuth bridge itself would do as there is a clear overfall on to the first apron below the bridge. The flow is not straight to the bridge, it being somewhat towards one end and though I am not certain, I think there is a considerable velocity of approach. A gauge could be fitted up above the bridge or two or three for the different spans I cannot go up there just now to see if a site is available but I could go there in April. I think the discharge already measured over the weir below the tunnel is fairly correct up to at least 600 cusecs and I doubt if discharges measured over a temporary weir down below would be more reliable. We can hardly put the temporary weir much above Kuruvunuth as the jungle is very dense in the valley down which the river comes and it would not be easy to get a man to read the gauges regularly if they were in the jungle. I will let you know further after I examine the place and will discuss it with Mildred in a few days.

(iii)

Demi-official—from the Hon'ble Colonel W. M. ELLIS, R.E., Chief Engineer for Irrigation.
To—M. O BRIEN, Esq., Executive Engineer, Madura Division.
Dated—Madras, the 24th March 1915.

Yours of 22nd March 1915.

The reason why it was proposed to maintain 600 cusecs from date of opening of the Periyar is that this was Gillman's proposal which it is understood was also yours. In modification I will now propose to issue at the upper measuring weir 500 cusecs only up to end of June and after that 750 cusecs. The latter allows 25 per cent. on 600 cusecs for loss in transmission and in practice would have the effect of giving as the season advances a bit more than 600 at Peranai owing to the help given by the river flow. Would it, do you think, be necessary to issue an extra amount for the first two or three days in order to fill up the river bed? Is it proposed when the Periyar opens about 10th to 12th June to allow the channels all the way down to take water or to pass it all down to Peranai keeping the head sluice of the upper channels closed. What is the present practice as regards opening the upper channels?

The effect of issuing 600 cusecs from the lake when there is a gain in transmission to Peranai and $\frac{5}{4} \times 600$ when there is a loss, has been worked out and the results are tabulated below :—

Year.	Actual level on 18th August.	Level on August 18th by above method of issues.	Extra draw off from lake M.C.FT.
1898	131·05	138·32	− 1,760
1902	136·35	142·19	— 1,511
1905	134·15	138·85	− 1,168
1906	135·90	131·99	+ 930
1908	134·90	140·87	− 1,519
1910	143·80	140·43	+ 777
1911	149·30	151·30	— 609
1913	145·90	141·43	+ 1,233

The results are much the same as those given on page 3 *ante* and the remark on pages 3 to 4 apply to them also.

F. E. MORGAN—24-3-15.

The year 1913 is the one in which the application of the rules most adversely affected the balances in Periyār lake and the quantity of extra draw off in that year would have affected the supply by causing closing of the lake about the 15th instead of 31st March 1914, but as the proposal of Mr. Gillman involves a closure on 15th March no failure would have occurred in the application of the proposed system.

2. The proposal of Mr. Gillman provides for maintaining 600 cusecs from the first day of opening at the Peranai drop and for the first fortnight however only water for seed-beds is required and it is proposed for this time only to issue from the lake 500 cusecs per day and to make no allowance for loss in transmission but afterwards to issue $\frac{4}{3}\times$ 600 cusecs from the lake daily (that is to allow 25 per cent. loss in transmission).

This will, it is anticipated, give at least 600 cusecs at Peranai from 1st July to 20th August and from 15th June to 30th June about 300 to 350 cusecs which will suffice for seedlings. The water to be issued will be slightly less than shown above. After the 20th August at Peranai (equivalent to 18th August at Periyār lake) the usual full supplies will be issued and water will be regulated as heretofore except that the lake issue shall cease on 13th March (equivalent to 15th March at Peranai).

Our working tables show that on the worst year 1913 we can just successfully do this but nothing more.

It is proposed to introduce this, tentatively at first, commencing from the current year and to publish the intention throughout the irrigated tract as early as possible.

W. M. ELLIS—25-3-15.

Please put Periyār lake water report cards for June 1914.

F.E.M.—25-3-15.

Herewith put up below.

R.S.—25—3—15.

In 1914 the tunnel was not opened until the 16th June with a lake level of 121·10, capacity 7,938 millions cubic feet. The extra draw off of 1,233 millions cubic feet in 1913—*vide* page 6 *ante*, would have reduced the above capacity to 7,938 — 1233= 6,705 millions cubic feet, which corresponds to a level of 111·7, an impossible level to open the lake at. As a matter of fact the level on the 13th when we are due to open was ·15 ft. lower than on the 16th which is the level considered above.

If the lake is to be closed on the 15th March evening, then in March 1914 second half issues to the extent of 565·9 millions cubic feet would not have been made and therefore the extra draw off on March 15th would be 1,233 — 566 = 667 millions cubic feet and the level would be 118·66 instead of 122·15.

On June 13th the level was 120·95, capacity 7,903 millions cubic feet, and the extra draw off of 667 would reduce the level at opening to 17·54. On the 16th the extra draw off would have increased to 667 + 3 × 64·8 = 861 millions cubic feet reducing the level on that date, the date of actual opening, from 121·10 to 116·43. I doubt whether at this level 64·8 millions cubic feet per diem can be issued.

F.E.M.—26-3-15.

Demi-official—from M. O'BRIEN, Esq., Executive Engineer, Madura Division.
To—Colonel ELLIS, Secretary to Government, Public Works Department (Irrigation Branch).

Dated—Madura, the 29th March 1915.

Yours of the 24th. Sorry for delay in replying but it was due to my being in camp. With regard to your proposals to issue certain quantities at the measuring weir, I think it would be simpler if nothing was specified as to the quantities to be issued there. I think it would be simpler and sufficient if the quantities to be passed over drop No. I main canal were specified. The Executive Engineer can regulate the lake discharge as required to give him the required discharge on drop I. It takes only about 36 hours to get down water from the lake. During July there are often freshes in the river and unless the Executive Engineer is given

a free hand as to the amount of water he is to take from the lake he will not be able to take advantage of the freshes. I have often run up to a 1,000 cusecs in the canal in July with the lake closed or almost so and it is very advisable that one should be able to regulate the draw from the lake to suit the state of the river at Peranai from day to day. I also think that, as a rule, 750 cusecs at the measuring weir will give run for more than 600 cusecs at Peranai in the kodai season. During the past four seasons we have very seldom ever had more than 600 cusecs on the measuring weir in the kodai season and we always have regarded 1·8 on the weir or 609 cusecs as our maximum. Once or twice I have seen about 700 cusecs for a short time, but that was exceptional.

The practice now is to open the Suruliar channels as the water comes down. I do not think it will make much difference whether the channels are opened as the water comes down or two days later. I also think there is no necessity to pass down a large quantity at the start to fill up the river bed. The river bed so far as I know never quite dries up and in the upper reaches there is flow all the year. Even at Peranai there is a certain amount of flow right through the hot weather. The river has a big fall and I believe the bed is kunker all the way, *i.e.*, kunker overlain with a deposit of sand.

The statement at **A** is not quite correct—*vide* discharges third tunnel July and August.

W. M. ELLIS—9–4–15.

PUBLIC WORKS DEPARTMENT
(IRRIGATION BRANCH).

With reference to Mr. Gillman's recommendation to pass 600 cusecs at the first drop at Peranai from some date not later than 10th June throughout the short crop season and to keep the Periyār lake open till 15th March yearly and then *shut down*.

An examination has been made of the results as far as possible giving effect to this.

In drawing up tables on the basis of actuals of past years the worst years recorded have been selected, viz., 1898, 1902, 1905, 1906, 1908, 1910, 1911, 1913.

Of all these the year 1913–14 has proved the most unfavourable for purposes of the proposed distribution.

2. According to the existing system, water is issued from Periyār lake on the orders of the Executive Engineer and that officer endeavours to make his issues from Periyār when combined with the natural discharge of the Vaigai above Peranai sufficient for the requirements at Peranai. Thus when there has been local rain in the Vaigai catchment, issues from Periyār have been much restricted. As the natural flow of the Vaigai is very fluctuating and it takes 36 hours to two days for water from Periyār to reach Peranai, there have been complaints in the past that the supplies at Peranai have been occasionaly unduly reduced and that cultivation has suffered and confidence in maintenance of supply affected.

3. While more careful study of the yield of the Vaigai from its local catchment might mitigate to some extent this cause of complaint, it is impossible in the case of so fluctuating a river for the Executive Engineer to foretell with any approach to accuracy what the natural flow of the Vaigai will be two days ahead.

4. It is therefore proposed to issue from the Periyār lake up to 18th August yearly fixed quantities of water and allow the natural (and frequently considerable) flow of the Vaigai to furnish additional supply. This, of course, is not economical, but it affords the security for maintained flow which Mr. Gillman considers so essential. Not only can we not count of receiving a steady help from the Vaigai in passing water from Periyār to Peranai, but the records of discharges at Periyār and those two days later at Peranai, show that loss in transmission is frequent and that during periods when such losses are sustained, 20 per cent. is a reasonable allowance for this.

To assure not less than 600 cusecs at Peranai, it is therefore necessary to issue 750 cusecs at Periyār.

It is found that this cannot be done with safety.

Enquiry has shown that early in the season for the first fortnight to three weeks
B | such large discharge is not required at Peranai, as seedlings are almost exclusively raised from Periyār water.

It is therefore proposed to issue for this period from Periyar, 500 cusecs up to the end of June and 750 cusecs after this.

A | Even with this it is found unsafe to open on 10th June and the 13th June is the earliest date of opening proposed, giving water at Peranai on 15th June.

The lake to be closed on 13th March, giving water at Peranai till 15th March.

5. The rules would be as below:—

(*a*) Issues from Periyar will commence yearly on 13th June and will be maintained at the rate of 500 cusecs until 28th June. The rate of issue will then be increased to 750 cusecs which will be maintained till 18th August. From that date the usual long crop issues will commence and the system of regulation hitherto in force will be maintained.

(*b*) The lake will be closed for issues on 13th March.

6. This allows six months issues from the lake in place of six months and five days proposed by Mr. Gillman as a minimum.

In the year 1913–14 working on this basis we can just scrape through without failure.

It is proposed to *tentatively* introduce this from next season and *to publish at once our intention to do so.*

This is a good year to commence the experiment as the lake has more water impounded than is usual at this time.

W. M. ELLIS.

7. The Executive Engineer consulted as regards the above, has considered the proposal as wasteful of water, as no allowance is made for freshes or flow in the Vaigai; as it is however owing to failure to forecast accurately the flow of the Vaigai in the past that complaints have arisen, it is considered that during the short crop season, no allowance should be made for this.

The rules should, however, allow the Executive Engineer to exercise discretion in times of heavy rainfall in the irrigated area or of high floods in the Vaigai.

The proposals are sent to Revenue for remarks.

W. M. ELLIS—9–4–15.

To the Revenue Department u.o.

REVENUE DEPARTMENT.

It is submitted that the proposals of the Public Works Department may be accepted in this department. In paragraph 8 of his report (page 9 of file flag M), Mr. Gillman advocated the opening not later than the 10th June and for closing about the 15th March. Mr. O'Brien (Executive Engineer) considers however that it would not be safe to fix it so early. Public Works Department's proposal at A above in this respect does not very materially differ from that of Mr. Gillman.

2. For the reason given at B on page 7 *supra* the proposal to pass 500 cusecs up to the end of June is not objectionable.

T.S.K.—18–4–15.

Out of the points dealt with in the report of the Hon'ble Mr. Gillman, those remaining to be considered are.

(1) The suitable date for opening the Periyar lake.
(2) The quantity of water that should be supplied from June to August.
(3) The suitable date for closing the lake.

1st point.—The Hon'ble Mr. Gillman says that the most suitable date is from 1st to 10th June not later than 10th.

The Public Works Department (Irrigation) says that it is found unsafe to open on 10th and that 13th will be the earliest date. Water will then reach Peranai on the 15th.

The difference between the two proposals is five days.

Mr. Gillman's report shows that the ryots do not begin cultivation at one time. On some of the lands cultivation is not commenced till July. The Executive

Engineer points out that if the kalam sowings (long crop) are advanced as the result of earlier kodai (short crop) sowings, the crop might run the risk of a deficient supply until the advent of the north-east monsoon. The Public Works Department, by calculations (page 3 of the notes), considers that the supply cannot safely be let in on the 10th June.

The Public Works Department's proposal may be accepted.

2nd point.—The Hon'ble Mr. Gillman proposes 600 cusecs at the first drop. This is taken as equivalent to 750 at the lake. The Public Works Department accept the figure but say that so much water will not be needed at the outset as the seedlings planted after water is let in do not require much water. They accordingly propose to reduce the quantity to 500 cusecs till the 28th June. The quantities actually required depend upon other factors also,—rain and freshes in the river. It is therefore proposed to give full discretion in the matter to the Executive Engineer. The Public Works Department's proposal may be accepted.

3rd point.—The crop is generally reaped by the end of March. For 10 or 15 days before cutting, no water will be required. The Hon'ble Mr. Gillman proposes 15th March for the date of closing. The Public Works Department proposes 13th March for closing at the lake, which means 15th March at Peranai.

The proposal may be accepted.

The Public Works Department's proposals do not differ very materially from Mr. Gillman's. It may be accepted.

A. H. A. TODD—19-4-15.

L. DAVIDSON—20-4-15.

To the Public Works Department (Irrigation Branch) u.o.

PUBLIC WORKS DEPARTMENT (IRRIGATION BRANCH).

Submitted.

G.V.—21-4-15.

F. E. MORGAN—21-4-15.

The main file is in circulation and this only treats of that part of Mr. Gillman's report on the Periyār which relates to the rules for issue of water from the Periyār lake.

The Public Works Department's proposals, which have been accepted by Revenue, are circulated.

W. M. ELLIS—22-4-15.

My Honourable Colleague need read only notes from page 7. I agree to take the course proposed but we must not commit ourselves to it permanently. The notice, which should issue at once, should refer only to the current year.

H. A. S[TUART]—31-5-15.

The wire drafted is to issue to the Collector and Executive Engineer, Madura. A draft order is to be made sanctioning as a trial for the current year, the issue of water with a view to maintain a steady supply over the first drop at Peranai during the kodai season as recommended by Mr. Gillman. The rules of regulation are to be as per page 8, paragraph 5 above.

An extra rule (*c*) should be added as below—

(*c*) In times of heavy rainfall in the irrigated area or of floods in the Vaigai, the Executive Engineer is authorised to alter regulation at his discretion to meet these special circumstances.

W.M.E.—31-5-15.

A draft order is submitted for approval. The case has not been seen by Honourable Member (Revenue) to whom the file may be circulated.

G.V.—1-6-15.

In view of the urgency and necessity for giving ryots warning if they are to profit by the system of regulation proposed the wire quoted in the draft order has been despatched prior to the case being seen by Honourable Member (Revenue).

The case and draft order is now submitted to Honourable Member (Revenue).

W. M. ELLIS—1-6-15.

As the draft Government Order has been despatched already, it is useless for me to read this exceedingly illegible file at this stage. Please submit the notes in print.

A. G. C[ARDEW]—1-6-15.

The draft Government Order has not been issued but the rules embodied in it after acceptance of Revenue have been approved by Honourable Member (Public Works Department). The wire quoted in the last paragraph of the order has been despatched.

2. Under circumstances Government Order may issue and then case should be printed up and sent to Honourable Member (Revenue).

W.M.E.—2-6-15.

[Issued as G.O. No. 273 I., dated 4th June 1915.]

PUBLIC WORKS DEPARTMENT
(IRRIGATION BRANCH).

Submitted that the case may now be circulated to the Hon'ble Mr. A. G. Cardew with reference to his note above.

M.S.V.—24-6-15.
G.V.—24-6-15.

F. E. MORGAN—25-6-15.
W. M. ELLIS—25-6-15.

I accept the draft Government Order the arrangements sanctioned being purely experimental.

The point on which Mr. Gillman laid stress was the maintenance of a steady supply, and I do not suppose he would take any exception to the reduction in the rate of issue from 600 cusecs at the first drop to 500 cusecs at the lake, so long as a steady supply at the latter rate is maintained. What seems more contrary to his recommendation is the permission which is given to the Executive Engineer in paragraph 2 (c) of the draft Goverment Order to alter the regulation at his discretion in times of heavy rainfall. This seems a compromise which, if the power to alter is freely used, will destroy the steadiness of the supply from the lake. However the arrangement is tentative and we shall see how it works.

A. G. C[ARDEW]—5-7-15.
W.M.E.—6-7-15.

Sects. II—N (b)—2-15.

Public Works (Irrign) DEPARTMENT.

Rules for the issue of water from the Periyar Lake-- Issuing as an experimental measure for the current year certain-- with reference to the Hon. Mr. Gillman's recommendations on the working of the Periyar system.

READ AGAIN G.O. No. 153-I, dated 25th March 1914.

READ ALSO:—

C. No. M, From the Hon. Mr. Gillman, Ref. No. 4305, dated 11-9-1914.
Memo to the S.E. VI Circle, No. 6283/14-A-1, dated 16-10-14.
From -do- No. 1671 C.E/655 G, d/19-11-14.
Memo to the S.E. VI Circle, No. 6283/14-Ap2, d/27-11-14.
--do---- 6283/14-A-3, d/5-1-15.
From --do--- 73 C.E/655, dated 9-1-1915.
From --do--- 145 C.E/655, dated 19-1-15.
Telegram to the Ex. Engr. Madura Divn. & the Collector of Madura, dated 2H, No. T-28, 0, dated 31-5-15.

ORDER.

No. 2751, dated 4-6-1915.

In his report on the working of the Periyar Irrigation System, the Hon'ble Mr. Gillman proposes -

(1) That the most suitable dates for the opening and closing of the Periyar Lake is from 1st to 10th June - not later than the 10th for the opening and 15th of March for closing.

(2) That 600 cusecs should be supplied over the first drop at Peranai from June to August.

2. The proposals have been carefully considered by the Chief Engineer for Irrigation and the Government direct that with a view to maintain a steady supply over the 1st drop at Peranai during the Kodai season, the following rules of regulation should be observed

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as ~~usual~~ an experimental measure for th current year only:-

(a) Issues from the Periyar Lake will commence on 13th June and will be maintained at the rate of 500 cusecs until 28th June. The rate of issue will then be increased to 750 cusecs which will be maintained till 18th August. From that date the usual long crop issues will commence and the system of regulation hitherto in -- force will be maintained.

(b) The lake will be closed for issues on the 13th March.

(c) In times of heavy rainfall in the irrigated area or of floods in the Vaigai the Executive Engineer is authorised to alter regulation at his discretion to meet these special circumstances.

3. The following telegram has been sent to the Executive Engineer, Madura - Division and the Collector of Madura:-

"T-28-0. A trial is to be made for "current year following Mr. Gillman's "recommendations and Periyar Lake to be "opened on 13th June and steady supply "at Peranai maintained without interrup-"tion throughout Kodai season. Notices "should be issued at once to ryots con-"cerned. Written instructions for regu-"lation of this year will follow".

Removed the water retaining the Periyar of 1914, recorded in T. Section by
AKL
7/1/1916

Spare copies B.Help despd 15/7/15

Spare copies despd 3/7

Order
Typed
Compd
[illegible] 2/6

DESPATCHED
Date 4/6
Enclos. —

To

The Supg.Engr.VI Circle.
,, Collector of Madura.
,, The Board of Rev.Sett.
,, Revenue Dept.
Copy to the Ex. Engr. Madura Dn.

Print only Editors table Order only

Rtd 21-8-15 with reference to note on C 6305/15

1.6.15

1/6/15

52

17-11-33 B.M.
30.11.48 VI

Duets —
Accompaniment —

[illegible]
[illegible]

1898.	June 13-15	2	1	168.48		2×51.84 + 1×64.80
	16-30		15	972.00		15×64.80
	July 1-15		15	972.00		15×64.80
	16-31		16	1036.80		16×64.80
	August 1-15		15	972.00		15×64.80
	16-18		3	194.40	4315.68	3×64.80
1902	June 13-15		3	194.40		3×64.80
	16-30		15	972.00		15×64.80
	July 1-15	10	5	842.40		10×51.84 + 5×64.8
	16-31	4	12	984.96		4×51.84 + 12×64.8
	August 1-15		15	972.00		15×64.80
	16-18		3	194.40	4160.16	3×64.80

05	June 13-15		3	194·40		3 x 64·80
	16-30	7	8	881·28		7x51·84+8 x 64·80
	July 1-15		15	972·00		15 x 64·80
	16-31	1	15	1023·84		1x51·84+15 x 64·80
	August 1-15		15	972·00		15 x 64·80
	16-28		3	194·40	4237·92	3 x 64·80
06	June 13-15		3	194·40		3 x 64·80
	16-30		15	972·00		15 x 64·80
	July 1-15		15	972·00		15 x 64·80
	16-31	5	11	972·00		5x51·84+11 x 64·80
	August 1-15	9	6	855·36		9x51·84+6 x 64·80
	16-18	3		155·52	4121·28	3 x 51·84

Detail statement showing the no of days there was gain or loss in transmission from [illegible] to Peramai ~~or loss in transmission~~

Year	Half Month	No of days gain in transmission	No of days loss in transmission

1898	June 13-15	2	1	168.48		2×51.84 + 1×64.80
	16-30		15	972.00		15×64.80
	July 1-15		15	972.00		15×64.80
	16-31		16	1036.80		16×64.80
	August 1-15		15	972.00		15×64.80
	16-18		3	194.40	4315.68	3×64.80
1902	June 13-15		3	194.40		3×64.80
	16-30		15	972.00		15×64.80
	July 1-15	10	5	842.40		10×51.84 + 5×64.8
	16-31	4	12	984.96		4×51.84 + 12×64.8
	August 1-15		15	972.00		15×64.80
	16-18		3	194.40	4160.16	3×64.80
1905	June 13-15		3	194.40		3×64.80
	16-30	7	8	881.28		7×51.84 + 8×64.80
	July 1-15		15	972.00		15×64.80
	16-31	1	15	1023.84		1×51.84 + 15×64.80
	August 1-15		15	972.00		15×64.80
	16-18		3	194.40	~~4237.92~~	3×64.80
1906	June 13-15		3	194.40		3×64.80
	16-30		15	972.00		15×64.80
	July 1-15		15	972.00		15×64.80
	16-31	5	11	972.00		5×51.84 + 11×64.80
	August 1-15	9	6	855.36		9×51.84 + 6×64.80
	16-18	3		155.52	4121.28	3×51.84

Detail statement showing the no of days there was gain or loss in transmission from [illegible] to [illegible]

Year	Half month	No of days gain in transmission	No of days loss in transmission

~~acom~~

Encle to acom

273-2

4/6/1915

Statement Showing the percentage of loss in transmission from the Tunnel to Drop No 1. Main Canal (Periyar)

Statement Showing the percentage of loss in transmission from the tunnel & Drop No. 1 of Main Canal (Periyar) 1898.

Date 1	Discharge tunnel mcft. 2	Discharge over Drop No. 1. 2 days later mcft 3	Difference Col 2 – Col 3 4	Percentage of Col 4 to 2 5	Remarks 6
1898 June					
11	42.57	44.06			
12	39.03	50.98			
13	49.75	65.84			
14	59.03	63.94			
15	85.59	68.60	16.99	19.85	Col 4 = $\frac{\text{Col 2} \times \text{col 5}}{100}$.
16	85.59	72.22	13.37	15.62	
17	87.76	71.45	16.31	18.55	or Col 5 = $\frac{\text{Col 4} \times 100}{\text{col. 2}}$.
18	87.76	71.45	16.31	18.55	
19	89.93	71.45	18.48	20.55	
20	89.93	71.45	18.48	20.55	
21	89.93	71.45	18.48	20.55	
22	89.93	71.45	18.48	20.55	
23	89.93	71.45	18.48	20.55	
24	89.93	69.46	20.47	22.76	
25	89.93	63.94	25.99	28.90	
26	89.93	63.94	25.99	28.90	
27	89.93	65.84	24.09	26.79	
28	89.93	67.65	22.28	24.77	
29	89.93	62.03	27.90	31.03	
30	87.76	58.49	29.27	33.34	No. of days in June = 16, Avge % = 23.[illegible]
				371.81	
July 1	87.76	60.05	27.71	31.57	
2	87.76	60.05	27.71	31.57	
3	87.76	63.94	23.82	26.00	
4	87.76	63.94	23.82	26.00	
5	87.76	66.53	21.23	24.19	
6	85.59	63.94	21.65	25.30	
7	85.59	63.94	21.65	25.30	
8	85.59	67.65	17.94	20.96	
9	85.59	68.17	17.42	20.35	
10	85.59	64.63	20.96	24.49	
11	85.59	65.84	19.75	23.07	
12	83.40	60.05	23.35	28.00	
13	83.40	62.03	21.37	25.62	
14	83.40	62.03	21.37	25.62	
				(358.04)	

G.N. 1/1/15

Sta[illegible] [illegible] Showing the percentage of losses in transmission from the Tunnel to the [illegible] [illegible] [illegible] [illegible] ([illegible]

(1898)

Dates	Discharge thro' Tunnel mcft	Discharge over Dam No. ?, 1.2 days later mcft.	Difference col 2 – col 3	Percentage of Col 4 to 2	Remarks.
1	2	3	4	5	6
July contd. 15	83·40	60·05	23·35	358·88 / 28·00	
16	83·40	60·05	23·35	28·00	
17	81·24	50·98	30·26	37·25	
18	81·24	49·25	31·99	39·38	
19	81·24	51·49	29·75	36·62	
20	79·07	58·49	20·58	26·03	
21	81·24	53·21	28·03	34·50	
22	79·07	52·36	26·71	38·78	
23	79·07	67·65	11·42	14·44	
24	77·03	72·40	4·63	6·01	
25	83·41	76·38	7·03	8·42	
26	85·59	76·38	9·21	10·76	
27	89·93	79·06	10·87	12·09	
28	91·11	81·65	9·46	10·38	
29	94·30	80·61	13·69	14·52	✓
30	94·30	76·38	17·92	19·00	
31	94·30	75·34	18·96	20·11 / 737·33	No. of days in July 31. Av. % = 23·78
August 1	94·30	74·30	20·00	21·21	
2	94·30	74·30	20·00	21·21	
3	94·30	73·01	21·29	22·57	
4	94·30	73·35	20·95	22·21	
5	94·30	76·38	17·92	19·00	
6	94·30	78·45	15·85	16·81	
7	94·30	81·65	12·65	13·41	
8	94·30	83·81	10·49	11·12	
9	94·30	81·65	12·65	13·41	
10	94·30	79·49	14·81	15·71	
11	94·30	80·09	14·21	15·07	
12	94·30	79·49	14·81	15·71	
13	94·30	76·90	17·40	18·45	
14	94·30	76·72	17·58	18·64	
15	94·30	76·90	17·40	18·45	
16	94·30	79·49	14·81	15·71	
17	94·30	81·65	12·65	13·41	✓
18	94·30	79·49	14·81	15·71 / 304·81	No. of days in August 18; Av. % 17·[illegible]

Statement showing the percentage of loss in transmission from the tunnel to [illegible] Canal

1911

Discharge of the tunnel in c.f.s.	Discharge near Dep[illegible] 4th & 2 days later in c.f.s.		Difference col. 2 – col. 3	Percentage of col. 4 to col. 2	Remarks
2			4	5	6
	c.f.s.	Gauge			
40.44	37.58	[illegible]	2.86	7.07	
27.72	46.82	[illegible]			
24.02	61.30	[illegible]			
24.02	28.07	[illegible]			
24.02	20.90	[illegible]	3.12	12.99	
24.02	17.45	[illegible]	6.57	27.35	13.3.05 ✓ 25.61 ✓
24.02	15.11	[illegible]	8.91	37.05	
33.94	17.45	[illegible]	16.49	48.59	
40.44	57.29	310			
40.44	55.82	[illegible]			
40.44	61.94	[illegible]			
40.44	71.44	[illegible]			
40.44	72.31	[illegible]			
40.44	68.57	[illegible]			
40.44	66.06	530			
40.44	66.03	510			
40.44	62.76	495			
40.44	37.58	335	2.46	6.08	
41.09	44.23	[illegible]	3.86	8.03	
52.64	[illegible]	490	1.72	3.27	
52.64	49.67	475	3.82	5.73	

Statement showing the percentage of loss in transmission from the [illegible] tunnel to Bogdol main Canal —

1911

Date	Discharge thro' tunnel in c.ft	Discharge over dam No 1 2 chain below	Difference col 2 − col 3	Percentage of col 4 to col 2	Remarks
1	2	3	4	5	6
1	52.69	[illegible] 862	4.16	7.86	
2	53.75	[illegible] 570	3.69	7.73	
3	52.69	[illegible] 570	8.62	16.38	
4	52.69	45.18 523	7.51	14.25	
5	52.69	52.31 606			
6	52.69	50.97 570	1.72	3.26	
7	52.69	48.55 580	4.14	7.86	
8	52.69	[illegible] 570	1.72	3.26	
9	52.69	[illegible] 570	1.72	3.26	
10	52.69	[illegible] 607	.14		
11	52.69	[illegible] 617			
12	52.69	78.36 907			
13	90.86	79.48 920	11.38	12.53	
14	108.61	79.48 920	29.13	26.79	
15	108.61	79.48 920	29.13	26.79	189.78
16	108.61	79.65 922	28.96	26.67	ave 23.72
17	108.61	87.61 1007	21.00	19.34	
18	108.61	79.48 920	29.13	26.79	
19	108.61	79.48 920	29.13	26.79	
20	108.61	77.06 [illegible]	31.55	26.08	189.78 / 23.72
21	79.18	80.22 922		95 3 64 / 15.22	
22	79.20	[illegible] 922			
23	79.40	[illegible] 934			
24	79.40	85.79 994			
25	79.40	79.48 920			
26	79.40	81.66 945			
27	79.40	80.77 925			
28	79.40	81.58 942			
29	79.40	90.62 1049			
30	79.60	82.94 960			
31	79.60	79.48 920			

Statement Showing the per Centage of [illegible] 1911

	Discharge at [illegible] M. c. ft	Discharge [illegible] M. c. ft	cusecs	Difference	Per Centage of	Remarks
1	76.40	78.87	906			
2	76.40	77.23	896			
3	76.40	74.47	882	1.93	2.53	
4	76.40	72.82	843	3.58	4.68	14.51
5	[illegible]	70.82	820	5.58	7.31	
6	98.42	76.30	860	22.12	22.74	
7	108.61	78.36	907	30.25	27.85	
8	108.61	96.50	1117	12.11	11.15	
9	108.61	94.34	1092	14.27	13.14	
10	108.61	94.34	1092	14.27	13.14	
11	108.61	92.74	1077	15.87	14.61	
12	108.61	89.85	1040	18.76	17.27	
13	108.61	88.12	1020	20.49	18.87	
14	108.61	88.55	1025	20.06	18.47	
15	108.61	87.86	1017	20.75	19.10	
16	108.61	89.42	1035	19.19	17.67	
17	108.61	87.00	1007	21.61	19.90	
18	108.61	86.83	1005	21.78	20.00 ✓	
19	108.61				234.71	
20	108.61				18.01	
21	108.61					
22	108.61					
23	108.61					
24	108.61					
25	108.61					
26	108.61					
27	108.61					
28	108.61					
29	108.61					
30	108.61					
31	108.61					

Statement Showing the percentage of [illegible]

1912

Date 1	Discharge [illegible] [illegible] 2	Discharge [illegible] [illegible] 3		Difference 4	Percentage of [illegible] 5	Remarks 6
[illegible]	4.96	Gauge	[illegible]			
[illegible]	16.50	12·3	10.59	5.71	35.80	
[illegible]	20.05	22·2	19.23	.82		
[illegible]	34.64	300	25.92	8.72	25.20	
[illegible]	36.86	390	32.69	3.17	10.20	
[illegible]	36.06	400	35.42	.64		
[illegible]	40.60	417	39.48	.96		
[illegible]	[illegible]	420	36.28	4.16	10.28	
[illegible]	[illegible]	410	35.42	5.02	10.40	
[illegible]	[illegible]	450	39.39	1.05	[illegible]	
25	[illegible]	420	37.32	3.12	7.70	
[illegible]	[illegible]	472	40.77			
[illegible]	[illegible]	420	37.58	2.86	7.07	
[illegible]	[illegible]	410	35.42	5.02	12.10	
[illegible]	[illegible]	370	[illegible]	6.75	16.60	
30	[illegible]	400	[illegible]	5.58	14.50	
					152.15	
					15.22	

1912 July

	Bridge height [illegible]	Bridge [illegible] Ladys lines		Difference Ch1 − Ch3	Percentage [illegible]	Remarks
1	2	Ladys lines		4	5	6
1	51.54	45.96	5.22	5.58	10.83	
2	52.69	41.64	6.82	11.05	20.97	
3	52.69	41.64	6.52	11.05	20.97	
4	52.69	41.64	6.52	11.05	20.97	
5	52.69	38.44	[illegible]	14.25	27.04	
6	52.69	42.84	6.5	9.85	18.69	
7	52.69	42.84	6.5	9.85	18.69	
8	52.69	46.65	7.20	6.04	11.46	
9	52.69	44.06	7.0	8.63	16.38	
10	52.69	44.06	7.0	8.63	16.38	
11	52.69	48.38	7.50	4.31	8.18	
12	52.69	45.96	7.72	6.73	12.77	
13	52.69	45.96	7.72	6.73	12.77	
14	52.69	45.96	7.72	6.73	12.77	
15	52.69	48.38	7.50	4.31	8.18	
16	52.69	46.21	[illegible]	6.48	12.29	
17	52.69	48.39	7.50	3.28	6.23	
					255.57 ✓	
					15.03	
18	57.99	67.22	8.85			
19	60.91	73.17	8.57			
20	60.91	74.46	8.62			
21	60.91	71.4	8.7			
22	60.91	69.60	8.45			
23	60.91	75.41	8.72			
24	60.91	85.78	9.93			
25	60.91	85.78	9.93			
26	60.91	87.95	10.18			
27	85.36	87.95	10.13			
28	52.69	92.87	10.75			
29	85.59	95.47	11.05			
30	96.80	95.39	10.4			
31	96.80	95.80	10.2			

	Drilage [illegible] Rs a/s	Drilage [illegible] Rs a/s		Difference $CR_2 - CR_3$	Percentage of CR_4 to CR_2	Remarks
	2	3		4	5	6
			Rs a/s			
1	96.80	1057	91.72	4.88	4.36	
2	96.80	1057	90.46	6.34	6.56	
3	96.80	1057	90.46	6.34	4.56	
4	96.80	1017	87.86	8.94	7.32	
5	96.80	947	81.51	10.17	12.44	
6	60.91	791	68.68			
7	60.91	878	75.55			
8	60.91	996	85.96			
9	70.80	971	83.80			
10	96.80	512	44.27	50.57	53.24	
11	75.02	512	44.21	51.83	62.37	118.89 / 15.41
12	60.91	792	68.42			
13	60.91	782	67.56			
14	60.91	782	67.56			
15	60.91	694	59.95			
16	60.91	725	62.57			
17	60.91	906	78.25			
18	60.91	828	71.60			
19	60.91					
20	78.86					
21	96.80					
22	96.80					
23	89.56					
24	60.91					
25	96.80					
26	96.80					
27	96.80					
28	96.80					
29	96.80					
30	96.80					
31	96.80					

Statement showing the daily discharge [illegible] Dr of No 1. Perez[illegible] main canal 1898. June (1898-99) I

Date	Gauge reading	Disch. in Cusecs	[illegible]	Remarks
1898 June				
10				
11				Gauge reading [illegible]
12				
13	3.00	510	44.06	
14	3.30	590	50.98	
15	3.75	762	65.84	
16	3.70	740	63.94	
17	3.85	794	68.60	
18	4.04	836	72.22	
19	4.00	827	71.45	
20	4.00	827	71.45	
21	4.00	827	71.45	
22	4.00	827	71.45	
23	4.00	827	71.45	
24	4.00	827	71.45	
25	4.00	827	71.45	
26	3.90	804	69.46	
27	3.70	740	63.94	
28	3.70	740	63.94	
29	3.75	762	65.84	
30	3.80	783	67.65	

1898 July

Date	Gauge reading	Disch. Cusecs	In c.ft.	Remarks.
1	3·65	718	62·03	
2	3·55	677	58·49	
3	3·60	695	60·05	
4	3·60	695	60·05	
5	3·70	740	63·94	
6	3·70	740	63·94	
7	3·77	770	66·53	
8	3·70	700	63·94	
9	3·70	740	63·94	
10	3·80	783	67·65	
11	3·83	789	68·17	
12	3·72	748	64·63	
13	3·75	762	65·84	
14	3·60	695	60·05	
15	3·65	718	62·03	
16	3·65	718	62·03	
17	3·60	695	60·05	
18	3·60	695	60·05	
19	3·30	590	50·98	
20	3·23	570	49·25	
21	3·32	598	57·69	
22	3·55	677	58·49	
23	3·38	616	53·21	
24	3·35	606	52·36	
25	3·80	783	67·65	
26	4·05	838	72·40	
27	4·25	884	76·38	
28	4·25	884	76·38	
29	4·38	915	79·06	
30	4·50	945	81·65	
31	4·45	933	80·61	

1896 August.

Date	Gauge reading	Disch. Cusecs	Mil. Cft.		Remark.
1	4.25	884	76.38	✓	
2	4.20	872	75.34	✓	
3	4.15	860	74.30	✓	
4	4.15	860	74.30	✓	
5	4.08	845	73.01	✓	
	4.10	849	73.35	✓	
7	4.25	884	76.38	✓	
8	4.35	908	78.45	✓	
9	4.50	945	81.65	✓	
10	4.60	970	83.81	✓	
11	4.50	945	81.65	✓	
12	4.40	920	79.49	✓	
13	4.43	927	80.09	✓	
14	4.40	920	79.49	✓	
15	4.28	890	76.90	✓	
16	4.27	888	76.72	✓	
17	4.28	890	76.90	✓	
18	4.40	920	79.49	✓	
19	4.50	945	81.65	✓	
20	4.40	920	79.49	✓	

10.2.30 [illegible]

Statement showing the Daily discharges over Drop No. 1 Perijar Main Canal. June 1902 (1902-03)

Date	Gauge reading	Discharge Cusecs	Mil: Cft	Remarks
June				
10	4.70	994	85.88	
11	4.75	1007	87.00	
12	4.80	1019	88.04	
13	4.80	1019	88.04	
14	4.80	1019	88.04	
15	4.50	945	81.65	518.65 Mil: Cft
16	4.40	920	79.49	
17	4.50	945	81.65	
18	4.50	945	81.65	
19	4.40	920	79.49	
20	4.45	933	80.61	
21	4.50	945	81.65	
22	4.40	920	79.49	
23	4.40	920	79.49	
24	4.40	920	79.49	
25	4.35	908	78.45	
26	4.30	895	77.33	
27	4.35	908	78.45	
28	4.15	861	74.39	
29	4.00	827	71.45	
30	3.60	695	60.05	1163.13 Mil: Cft
		Total		1681.78 Mil: Cft

July 1952.

Date	Gauge reading	Discharge Cusecs	Mil. Cft.	Remarks
1	2.80 ✓	458	39.57	
2	2.70 ✓	434	37.50	
3	2.70 ✓	434	37.50	
4	2.70 ✓	434	37.50	
5	3.00 ✓	510	44.06	
6	3.35 ✓	606	52.36	
7	3.80 ✓	783	67.65	
8	3.95 ✓	816	70.50	
9	4.05 ✓	838	72.40	
10	4.00 ✓	827	71.45	
11	4.00 ✓	827	71.45	
12	4.40 ✓	920	79.49	
13	4.40 ✓	920	79.49	
14	4.40 ✓	920	79.49	
15	4.40 ✓	920	79.49	979.90 Mil. Cft.
16	4.55 ✓	958	82.77	
17	4.70 ✓	994	85.88	
18	4.70 ✓	994	85.88	
19	4.70 ✓	994	85.88	
20	4.70 ✓	994	85.88	
21	4.45 ✓	933	80.61	
22	4.20 ✓	872	75.34	
23	4.05 ✓	838	72.40	
24	3.85 ✓	794	68.60	
25	3.80 ✓	783	67.65	
26	4.10 ✓	849	73.35	
27	4.35 ✓	908	78.45	
28	4.30 ✓	895	77.33	
29	4.30 ✓	895	77.33	
30	4.55 ✓	958	82.77	
31	4.80 ✓	1019	88.04	1288.56 Mil. Cft.

2268.46 Mil. Cft.

August 1902.

[illegible]	[illegible] readings	[illegible]	Cu/: Cft
1	4.80 ✓	1019	88.04
2	4.70 ✓	994	85.88
3	4.70 ✓	994	85.88
4	4.45 ✓	933	80.61
5	4.40 ✓	920	79.49
6	4.35 ✓	908	78.45
7	[illegible] ✓	895	77.33
8	4.50 ✓	945	81.65
9	4.40 ✓	920	79.49
0	4.60 ✓	970	83.81
1	4.55 ✓	958	82.77
2	4.35 ✓	908	78.45
	4.50 ✓	945	81.65
	4.55 ✓	958	82.77
	4.40 ✓	920	79.49
	4.60 ✓	970	83.81
	4.60 ✓	970	83.81
8	4.60 ✓	970	83.81
	4.60 ✓	970	83.81
0	4.60 ✓	970	83.81

1225.76 cu: cft.

419.05 cu: cft

1644.81 cu: cft.

Statement showing the daily discharges [illegible]

[illegible] Main Canal

June 1905-1906

Date	Gauge reading	Dis[illegible] cusecs	Mil: Cft	Remarks
June				
10	2.50	390	33.70	
11	2.75	446	38.53	
12	2.60	411	35.51	
13	2.40	368	31.79	
14	2.25	335	28.94	
15	2.15	312	26.96	195.43 Mil: Cft.
16	2.40	368	31.79	
17	2.35	357	30.84	
18	2.50	390	33.70	
19	2.70	434	37.50	
20	3.90	804	69.46	
21	3.55	718	62.03	
22	3.45	641	55.38	
23	3.25	576	49.77	
24	3.10	535	46.22	
25	3.30	590	50.98	
26	3.55	677	58.49	
27	3.60	695	60.05	
28	3.70	740	63.94	
29	3.75	762	65.84	
30	4.50	945	81.65	797.64 Mil: Cft.
				993.07 Mil: Cft.

July, 1905

Date	Gauge reading	Disch. Cusecs	Mil: Cft	Remarks
1	4·40	920	79·49	
2	4·70	994	85·88	
3	4·65	982	84·84	
4	4·60	970	83·81	
5	4·50	945	81·65	
6	4·50	945	81·65	
7	4·45	933	80·61	
8	4·25	884	76·38	
9	4·20	872	75·34	
10	4·50	945	81·65	
11	4·35	908	78·45	
12	4·35	908	78·45	
13	4·40	920	79·49	
14	4·30	895	77·33	
15	4·30	895	77·33	1202·35 Mil: Cft
16	4·30	895	77·33	
17	4·30	895	77·33	
18	4·40	920	79·49	
19	4·35	908	78·45	
20	4·50	945	81·65	
21	4·40	920	79·49	
22	4·40	920	79·49	
23	4·90	1049	90·63	
24	4·80	1019	88·04	
25	4·65	982	84·84	
26	4·55	958	82·77	
27	4·60	970	83·81	
28	4·45	933	80·61	
29	4·40	920	79·49	
30	4·30	895	77·33	
31	4·30	895	77·33	1298·08 Mil: Cft
			Total	2500·43 Mil: Cft.

August 1915

Date	Gauge reading	Water drawn	Cu. ft. eff.	Remarks
1	4.45	933	80.61	
2	4.40	920	79.49	
3	4.65	982	84.84	
4	4.45	933	80.61	
5	4.55	958	82.77	
6	4.35	908	78.45	
[illegible]	4.40	920	79.49	
8	4.30	895	77.33	
9	4.20	872	75.34	
10	4.50	827	71.45	
11	4.50	827	71.45	
12	4.50	827	71.45	
13	4.40	920	79.49	
14	4.35	908	78.45	
15	4.30	895	77.33	1168.55 Cu. ft. eff.
16	4.20	872	75.34	
17	4.20	872	75.34	
18	4.15	861	74.39	
19	4.35	908	78.45	
20	4.40	920	79.49	383.01 Cu. ft. eff.
				1551.56 Cu. ft. eff.

Prepared
[illegible]
1/11/15

Statement showing the daily discharge [illegible]
Prayag Main Canal June 1906-1907.

Date	Gauge reading	Disch: Cusecs	Vol: Cft	Remarks.
10				
11				
12				
13				
14				
15				Nil.
16				
17				
18				
19				
20				
21				
22	2.30	346	29.89	
23	2.77	451	38.97	
24	3.10	535	46.22	
25	2.97	502	43.37	
26	2.90	484	41.82	
27	2.80	458	39.57	
28	2.80	458	39.57	
29	2.78	453	39.14	
30	2.60	411	35.51	354.06 Mil: Cft.

Total 354.06 Mil: Cft.

1936-37) July.

Date	Gauge reading	Discharge Cusecs	Vol: Cft	Remark.
1	2.40	368	31.79	
2	2.27	339	29.29	
3	2.20	323.	27.91	
4	2.25	335	28.94	
5	2.20	323	27.91	
6	2.10	301	26.01	
7	2.10	301	26.01	
8	2.05	291	25.14	
9	2.05	291	25.14	
10	2.00	281	24.28	
11	2.10	301	26.01	
12	2.20	323	27.91	
13	2.30	346	29.89	
14	2.28	341	29.46	
15	2.45	379	32.74	418.43 Vol: Cft
16	2.50	390	33.70	
17	2.60	411	35.51	
18	2.85	471	40.69	
19	3.00	510	44.06	
20	4.60	970	83.81	
21	4.90	1049	90.63	
22	4.60	970	83.81	
23	4.67	987	85.28	
24	4.63	977	84.41	
25	4.50	945	81.65	
26	4.30	895	77.33	
27	4.23	879	75.94	
28	4.40	920	79.49	
29	4.47	937	80.96	
30	4.43	928	80.18	
31	4.50	945	81.65	1139.10 Vol: Cft
			Total	1557.53 Vol: Cft

Section	Gauge reading	[illegible] Area	M. Cft	Remark.
1	2.40	368	31.79	
2	2.27	339	29.29	
3	2.20	323	27.91	
4	2.25	335	28.94	
5	2.20	323	27.91	
6	2.10	301	26.01	
7	2.10	301	26.01	
8	2.20	323	27.91	
9	2.05	291	25.14	
10	2.00	281	24.28	
11	2.10	301	26.01	
12	2.20	323	27.91	
13	2.30	346	29.89	
14	2.28	341	29.46	
15	2.45	379	32.74	421.20 M. Cft.
16	2.50	390	33.70	
17	2.60	411	35.57	
18	2.85	471	40.69	
19	3.00	510	44.06	
20	4.60	970	83.81	237.77
			Total	658.97

[illegible]

Statement showing [illegible]
Prajor Main Canal. June 1908–1909

Date	Gauge reading	Areas	Cub. ft.	Remarks
10	3·58	628	59·44	
11	3·40	622	53·74	
12	3·35	606	52·36	
13	3·30	590	50·98	
14	3·45	641	55·38	
15	4·10	849	73·35	345·25 Cub. ft.
16	3·85	794	68·60	
17	3·60	695	60·05	
18	3·60	695	60·05	
19	3·60	695	60·05	
20	3·83	789	68·17	
21	3·85	794	68·60	
22	3·70	740	63·94	
23	3·50	659	56·94	
24	3·40	622	53·74	
25	3·45	641	55·38	
26	3·10	535	46·22	
27	3·05	523	45·19	
28	3·25	576	49·77	
29	3·90	804	69·46	
30	3·85	794	68·60	894·76
				1240·01

July 1908

Date	Gauge reading	Disch. cusecs	Mil: Cft.	Remarks.
1	4.10	849	73.35	
2	4.00	827	71.45	
3	3.90	804	69.46	
4	4.20	872	75.34	
5	3.75	762	65.84	
6	3.75	762	65.84	
7	3.50	659	56.94	
8	3.55	677	58.49	
9	3.50	659	56.94	
10	3.05	523	45.19	
11	3.05	523	45.19	
12	3.20	561	48.47	
13	3.03	578	44.75	
14	3.05	523	45.19	
15	2.95	497	42.94	865.38 Mil: Cft.
16	2.95	497	42.94	
17	2.93	492	42.51	
18	2.95	497	42.94	
19	3.03	578	44.75	
20	3.43	633	54.69	
21	4.95	1064	91.93	
22	5.20	1134	97.98	
23	5.20	1134	97.98	
24	5.35	1182	102.12	
25	5.35	1182	102.12	
26	5.88	1377	118.97	
27	5.65	1288	111.28	
28	5.30	1165	100.65	
29	5.05	1091	94.26	
30	4.65	982	84.84	
31	4.15	861	74.39	1304.35 Mil: Cft.
			Total	2169.73 Mil: Cft.

August 1908.

Date	Gauge reading	Disch. Cusecs	M. Cft	Remarks.
1	4.15	861	74.39	
2	4.25	884	76.38	
3	4.35	908	78.45	
4	4.60	970	83.81	
5	5.30	1165	100.65	
6	5.40	1198	103.51	
7	4.98	1072	92.62	
8	5.35	1182	102.12	
9	5.25	1150	99.36	
10	5.30	1165	100.65	
11	5.10	1104	95.38	
12	4.90	1049	90.63	
13	4.68	989	85.45	
14	4.68	989	85.45	
15	4.60	970	83.81	1352.66 M. Cft
16	4.38	915	79.06	
17	4.33	903	78.02	
18	4.20	872	75.34	
19	4.15	861	74.39	
20	4.25	884	76.38	383.19 M. Cft
				1735.85 M. Cft.

Prepared
[illegible]
11/11/15.

1890 Main Canal [illegible] June [illegible]

Date	Gauge reading	Disch. Cusecs	Vol: C/ft	Remark
10				
11				
12				
13				
14				
15				[illegible]
16				
17				
18				
19				
20				
21				
22	2.50	390	33.70	[illegible]
23	2.98	505	43.63	
24	2.02	285	24.62	
25	1.70	222	19.18	
26	2.00	281	24.28	
27	2.20	323	27.91	
28	3.85	794	68.60	
29	3.43	633	54.69	
30	3.47	648	55.99	352.60 Vol. Cft.

Total 352.60

July 1910

Date	Gauge reading	Disch. cusecs	Mil. cft	Remarks
1	3.05	525	45.19	
2	2.95	497	42.94	
3	2.98	505	43.63	
4	3.10	535	46.22	
5	3.00	510	44.06	
6	3.10	535	46.22	
7	3.50	657	56.94	
8	3.55	677	58.49	
9	3.50	657	56.94	
10	3.60	695	60.05	
11	3.55	677	58.49	
12	3.47	648	55.99	
13	3.25	576	49.77	
14	3.10	535	46.22	
15	3.15	548	47.35	758.50 M. Cft.
16	0.97	98	8.47	
17	2.83	466	40.26	
18	3.22	567	48.99	
19	2.62	416	35.94	
20	2.67	427	36.89	
21	2.55	401	34.65	
22	2.60	411	35.51	
23	3.07	528	45.62	
24	3.07	528	45.62	
25	2.50	390	33.70	
26	2.35	357	30.84	
27	2.03	287	24.80	
28	2.03	287	24.80	
29	2.13	308	26.61	
30	2.87	476	41.13	
31	2.43	375	32.40	546.23 M. Cft.
			Total	1304.73 M. Cft.

August 1910.

Date	Gauge reading	Discharge Cusecs	Mil: Cft.	Remarks.
1	3·80	783	67·65	
2	3·75	762	65·84	
3	3·63	709	61·26	
4	3·45	641	55·38	
5	3·45	641	55·38	
6	4·33	903	78·02	
7	4·30	895	77·33	
8	4·08	845	73·01	
9	3·80	783	67·65	
10	3·55	677	58·49	
11	3·55	677	58·49	
12	3·48	652	56·33	
13	3·38	616	53·22	
14	3·30	590	50·98	
15	3·30	590	50·98	930·01 Mil: Cft.
16	3·22	567	48·99	
17	3·27	581	50·19	
18	3·18	556	48·04	
19	2·97	502	43·37	
20	3·28	584	50·46	

241·05 Mil: Cft.

1171·06 Mil: Cft.

[illegible] 12/1/15

Statement Showing the [illegible] Discharge [illegible]
Periyar Main Canal for 1911–1912

[illegible]	Month	Date	Gauge reading	Discharge: In cusecs	Discharge: In [illegible]	Remarks
1	2	3	4	5	6	7
1	June	10	1.44	235	20.30	
		11	2.57	405	34.99	
		12	2.70	434	37.50	
		13	3.23	570	49.25	
		14	2.78	441	38.10	
		15	2.20	323	27.91	
		16	1.88	247	21.34	
		17	1.63	209	18.06	
		18	1.27	182	15.72	
		19	1.75	232	20.04	
		20	3.45	641	55.38	
		21	3.50	659	56.94	
		22	3.60	695	60.05	
		23	3.88	800	69.12	
		24	4.05	838	72.40	
		25	3.72	749	64.71	
		26	3.08	530	45.79	
		27	3.12	540	46.66	
		28	2.95	497	42.94	
		29	2.73	441	38.10	
		30	3.00	510	44.06	
	July	1	3.30	590	50.98	
		2	3.25	576	49.77	
		3	3.20	561	48.47	
		4	3.00	510	44.06	
		5	3.02	515	44.50	
		6	3.05	530	45.79	
		7	3.35	606	52.36	
		8	3.30	590	50.98	
		9	3.20	561	48.47	
		10	3.30	590	50.98	

Statement showing the Daily discharge of Drop No. 1 Periyar Main Canal for 1911 - 1912

Yr.	Month	Date	Gauge reading in ft.	Discharge in cusecs	Discharge in M.C.ft.	Remarks.
1	2	3	4	5	6	7
1911	July contd.	11	3·30	590	50·98	
		12	3·38	616	53·22	
		13	3·55	677	58·49	
		14	4·37	913	78·88	
		15	4·40	920	79·49	
		16	4·40	920	79·49	
		17	4·40	920	79·49	
		18	4·52	950	82·08	
		19	4·75	1007	87·00	
		20	4·52	950	82·08	
		21	4·40	920	79·49	
		22	4·30	895	77·33	
		23	4·45	933	80·61	
		24	4·45	933	80·61	
		25	4·45	933	80·61	
		26	4·75	1007	87·00	
		27	4·40	920	79·49	
		28	4·50	945	81·65	
		29	4·45	933	80·61	
		30	4·48	940	81·22	
		31	4·76	1009	87·17	
	August	1	4·53	953	82·34	
		[illegible]	4·40	920	79·49	
		3	4·37	913	78·88	
		4	4·33	903	78·02	
		5	4·15	861	74·39	

Statement Showing the Daily discharge of [illegible] Periyar Main Canal for 1911-1912

Year	Month	Date	Gauge reading in Ft.	Discharge In cusecs	Discharge In million cubic feet	Remarks
1	2	3	4	5	6	7
1911	August	6	4.05	845	73.01	
		7	3.99	825	71.28	
		8	4.15	861	74.39	
		9	4.35	908	78.45	
		10	5.15	1,119	96.68	
		11	5.12	1,110	95.90	
		12	5.05	1,091	94.26	
		13	5.00	1,078	93.13	
		14	4.85	1,034	89.34	
		15	4.80	1,019	88.04	
		16	4.83	1,028	88.81	
		17	4.80	1,019	88.04	
		18	4.83	1,028	88.81	
		19	4.75	1,007	87.00	
		20	4.81	1,022	88.30	

RN/3/2/15

Statement Showing the Daily discharge of Drop No. 1 Periyar Main canal for 1913-1914.

Year	Month	Date	Gauge reading in ft.	Discharges In cusecs	Discharges In mil. cft.	Remarks
	2	3	4	5	6	7.
1913	June	10	..	..		
		11	..	..		
		12	..	..		
		13	..	..		
		14	..	..		
		15	..	..		
		16	..	..		
		17	..	..		
		18	..	..		
		19	..	..		
		20	..	..		
		21	..	..		
		22	..	..		
		23	..	..		
		24	..	..		
		25	..	..		
		26	..	..		
		27	..	..		
		28	..	..		
		29	1·68	201	17·37	
		30	2·00	281	24·28	
	July	1	2·00	281	24·28	
		2	4·13	856	73·96	
		3	3·67	727	62·81	
		4	3·95	816	70·50	
		5	1·93	266	22·98	
		6	1·13	124	10·71	
		7	2·10	301	26·01	
		8	2·52	394	34·04	
		9	3·15	548	47·35	

Statement showing the daily discharge of Drop No. 1 Periyar Main canal for 1913-1914

Year	Month	Date	Gauge reading in ft.	Discharges: In Cusecs	Discharges: In M.c.ft.	Remarks
1	2	3	4	5	6	7
1913	July contd.	10	3·17	553	47·78	
		11	3·05	523	45·19	
		12	3·05	523	45·19	
		13	2·98	505	43·63	
		14	3·02	515	44·50	
		15	3·03	518	44·76	
		16	3·05	523	45·19	
		17	3·33	600	51·84	
		18	4·62	975	84·24	
		19	4·85	1,034	89·34	
		20	4·45	933	80·61	
		21	4·18	867	74·91	
		22	3·95	816	70·50	
		23	3·57	684	59·10	
		24	3·35	606	52·36	
		25	3·17	553	47·78	
		26	3·20	561	48·47	
		27	3·22	567	48·99	
		28	3·03	518	44·76	
		29	2·98	505	43·63	
		30	3·23	570	49·25	
		31	3·48	652	56·33	
	August	1	4·90	1,049	90·63	
		2	4·15	861	74·39	
		3	3·63	709	61·26	
		4	3·23	570	49·25	
		5	3·10	535	46·22	
		6	3·12	540	46·66	
		7	3·30	590	50·98	

Statement showing the daily discharge of [illegible]
Periyar Main Canal for 1913 - 1914.

Year	Month	Date	Gauge readings in ft	Discharges In cusecs	Discharges In mill. c.ft	Remarks
1	2	3	4	5	6	7
1913	August Contd.	8	3·32	596	51·49	
		9	3·65	718	62·04	
		10	3·85	794	68·60	
		11	3·90	804	69·47	
		12	3·58	688	59·44	
		13	3·32	596	51·49	
		14	3·37	612	52·88	
		15	3·23	570	49·25	
		16	3·10	535	46·22	
		17	3·20	561	48·47	
		18	3·20	561	48·47	
		19	3·33	600	51·84	
		20	4·58	965	83·38	

PUBLIC WORKS DEPARTMENT

Office of the Chief Engineer for Irrigation.

TECHNICAL NOTES.

Subject:—

G.O. No 273-D
4-6-15

E.O.

Please see linked file. A draft memo to the S.E. is put up in that file for approval.
[signature]
4.1.15

Where is P.W.D. note & file.

A reference has been a matter pending with S.E. III asking for date on which the reasoning out of W.S. Gillman's suggestion for keeping open from 10 June to 15 years —

A special letter may be written about cause of delay in reply.

2. I am not clear if W.S. Gillman's report was seen by the E.E. W.D. And to what extent it was acted upon.

I put up a draft D/O to W.S. Gillman which may go. in re 4 Jan. with a practical copy of his report[×] for ready reference

[initials]

28/12/14

Fair copy of the D.O. submitted for signature. A spare copy of the report has been attached to the D.O.
[signature]
4.1.15

× A spare copy can't be obtained if not available.

My dear Gillman
With reference to your report on the working of the Kerigan Irrigation (a copy of which is enclosed)
I am doubtful ~~if it~~ whether the report has been seen by O'Brien who was your ~~[illegible]~~ technical Assistant & if he agrees with it in so far as ~~this~~ it affects water distribution & the ~~[illegible]~~ local P.W.D. administration & if not Whether to which items he points his adherence.
Not possessing any local knowledge of Kerigan Irrigation it is necessary ~~[illegible]~~ for me to consult the local officers on such points but if you ~~[illegible]~~ have already

done so and are in a position to say that your proposals were have been seen by the Ex. Engr. (O'Brien) who agrees with them. Time will be saved [illegible] ~~by reference~~ as a reference may be unnecessary

Yours sincerely

[illegible]

28/12/[illegible]

Despatch 5.1.15

1 The letters have been signed for despatch.

2 In order to expedite disposal or regards working tables as soon as the S.E.'s replies regarding duties & Draw off required for Kalam Crop is received, the statements may be prepared showing the working of the Cabe with the Land year under the supposition
(a) That opening is period 10 June
(b) That 600 Cusecs are continuously passed over the 7th drop.

There will be a difficulty in regard to loss in transmission.

To deal with this ~~it~~ it will be best to take the actual daily discharge over the 1st R of [illegible] & the corresponding discharge of the Lake assuming a time of transmission which may be fixed for comparing the discharges.

The Lake daily discharges may be diminished or increased as required to make up the 600 cusecs.

When ~~the~~ the discharge at Peranai is in excess of that of the tunnel the tunnel discharge will still be maintained at not less than 600 cusecs.

~~The 20 August [illegible] the date which~~

The above may be worked out for 10 June to 20 August which is the date to which Mr Gillman's diagrams ~~are to be made up~~ are made.

[signature]

DE1

5.1.15

The file will after perusal by DE1 be sent to T for necessary action with reference to para 2 of E.J.'s note above.

[initials] [illegible] 1.15

This [illegible] to T [illegible] He will [illegible]

D.E.I.
———
E.I. Submitted to D.E.I. for orders.

1. The bad years are:- 1898-1899, 1902-1903 1905-1906 1906-1907 1908-1909 1910-1911 x.

2. The discharges over drop No.1 of the main canal have been calculated for these years and are herewith.

3. In one of the S.E's Inspection notes, x it was stated that water takes 2 days to reach Peranai dam from the Periyar Lake. It may therefore be taken that 2 days is the time that water takes to travel from the lake to Drop No.1

4. Discharges through the tunnel were compared with discharges over Drop No. 1, 2 days later for the years 1898, 1911 & 1912 to see what percentage of water is lost in transmission, evaporation and absorption. The results are herewith.

It may roughly be taken that 25% is lost in transmission.

[illegible] 12/1/15

[illegible] 16/1/15

You may for purpose of these calculations assume 20 p.c. loss in transmission for purpose of adding to discharge of tunnel & make deficiency up to 100 cusecs

2 - Send another reminder to S.E. II for a reply to reference

[illegible] 16/1/15

R.T.D.

x for June 1896. R No 59 PR 8.7.1896

[illegible]

Flagged 5

Flagged 7

A Section for Reminder

D.E.D

E.1. Before the receipt of orders of E.D on page 5. ante, I had the working of the Perigar lake made out for the year 1898 for the Kalam crop season (10th June to 20th August) assuming that 25 p.c. is the loss in transmission &c: and it is herewith put up for your perusal and orders.

Tables would be worked out assuming 20 p.c. is the loss in transmission.

[illegible]
18.1.15.

[illegible] 18/1/15

[illegible] at the [illegible]

[illegible]
18/1/15

[illegible] E.D. [illegible] orders [illegible] the table for the other years

[illegible]
18/1/15

The Supg Engineer VI circle has sent a reply in his No 73 CE/655 dy 9.1.15 (put up in file No 6283/up). A reminder to the S.E as ordered by the Chief Engr is not necessary.

KSR
20.1.15.

Rules for the working of the Reservoir

Periyar Lake.

(Col.3) Lake level, representing the previous day's balance of the reservoir

Col.4. Total discharge of the Periyar, obtained from col 6 of the statements of the daily discharges of the Periyar (Prepared in E.Is Office.)

Col.5. Actual discharge through the tunnel obtained from col 4 of the above book.

Col 6. Required discharge through the tunnel, is the required discharge over Drop No.1, i.e. 600 cusecs x c= 1¼ (C is obtained by comparing the discharges through the tunnel and the discharge over Drop No. 1, two days later and the loss in transmission is taken as 20 per cent.

Col. 7. Actual discharge over Drop No. 1 (Calculated in E.I's Office).

Col.8. Required discharge over Drop No.1 600 cusecs or 51.84 mcft per day.

Col.9. Demand in the Reservoir for Irrigation:-

(a) Col 5 + 5/4.(Col 8 - Col 7). If col 5 is less than col 6 and col 7 is less than col 8.

(b) Col 5. If col 7 is greater than col 8 and col 5 is less than col 6.

(c) Col 6. If col 5 is greater than col 6 and ~~col 7 is greater than col 8~~

Col 10. (Col 4-col 9) If col 4 is greater than col 9

Col. 11. (a) Col 10 + col 11 of the previous day

(b) Col 11 of the previous day - col 9 If col 10 is zero

Col 12 Surplus - all discharges over + 152.00 (15,662 mcft)

T

Please put up green book of discharges of Periyar lake. I think that those for 1913 – 14 are under print, if so please up cards as also for 1914.

2. Also put up report on Mr O'Brien's proposal of measuring weir at Periyar tunnel exit.

3. Have we got a curve of discharges for depths on the weir or for levels of lake with tunnel fully open?

[illegible] 1/2/15

~~321~~

(1)

Herewith the green books of discharges 1896 to March 1913 and manuscript statement for 1913-14. also the water cards of Periyar for 1914.

(2) For the report of Mr O'Brien, please

Hay J

See page 20 to 25 of Dr Memo No 105 dated 22 January 1914

(3) There is no curve of discharge for depths on weir or for level of lake with tunnel fully open. The discharges of the tunnel (headsluice) are taken from the table II printed on page 24 of Dr Memo No 105 dated 22.1.1914 referred to above. For the depths greater on the weir for which discharges have not been given in the Table, the formulae given in the remarks Column of the Table are used.

Hay J

M.L.
1/2/1915

5,000—7-1-14.

NOTES.

6283/14

D.E.I.

The Working of the Periyar Lake for the period from 10th to 18th August for the years, 1898-18[illegible] 1902-1903, 1905-1906, 1906-1907, 1908-1909, 1910-1911, 1911-1912 & 1913-[illegible] is herewith put up.

[illegible] 9/2/15

[illegible] 9.2.15

T

There is nothing in the heading of Col. 11 to indicate whether the balance is total or effective storage.

2\. Against the balance on Aug 20th in each year put the corresponding lake level.

18th

[illegible] 14/2/15

D.E.I.

(1) The Col. 11 indicates effective storage (vide rules for the working of the Reservoir given upto [illegible] the working table)

2\. Against the balance on August 18th in each year, the corresponding lake level has already been noted.

[illegible] 15.2.15

The rules have nothing to do with it and I find that Col 11 is Gross storage not Effective

T

In the years 1906, 1910 & 1913 add up the actual issues from the beginning of the season to Aug 18th inclusive & compare these with the issues proposed in statement below.

[illegible] 15/2/15

DED

x Puton below

A Comparative Statement showing the actual issues & the proposed issues from the beginning of the season to the 28th of August, 1906, 1910, 1913, is herewith submitted

[illegible] 17/2/15 [illegible] 18/2/15

Comparative Statement showing the actual and proposed issues taken from the [illegible] of the Reservoir — Periyar Lake,

Years	1906		1910		1913		
Period	Actual issues	Proposed issues	Actual issues	Proposed issues	Actual issues	Proposed issues	Remarks
	m.c.ft	m.c.ft	m.c.ft	m.c.ft	m.c.ft	m.c.ft	
o th to 30th June	721.08	{1070.05 290.75	660.97	{1179.17 161.74	178.92	{909.12 307.32	Proposed issues = Col 9 + River
1st to 31st July	1833.29	{1517.30 390.04	1551.22	{1380.08 471.56	1477.04	{1365.10 349.24	discharges of the days when there
to 18th August	565.80	{617.31 47.50	1143.23	{956.97 190.53	1137.50	{888.89 225.11	are no impounding.
	3120.17	3932.95	3355.42	4340.35	2793.46	4164.78	
Percentage of cess of Proposed sues over "actual"	26%		29.35%		49%		

[illegible]

T

Please let me have the table of capacities & water levels, Perujar Lake.

[illegible] 24/7/15

DEI

Herewith a copy of the table

[illegible]
26/3/1915

Sent back to T on 25/6/15

[illegible]

Lo No 273 8
4/6/15

Year 1898—99

[illegible]

9									8807
10	121.45								
11		157.47	42.57	64.80	44.06	51.84	9.82 / 42.57	99.08	8106
12		–	39.03	64.80	57.98	51.84	1.08 / 37.83	–	8066
13		168.55	49.75	64.80	[illegible]	51.84	49.75	118.80	8185
14		[illegible]	57.03	64.80	63.94	51.84	57.03	336.60	
15		[illegible]	85.57	64.80	68.60	[illegible]	64.80	328.57 / 665.17	8850
16		[illegible]	85.57	64.80	72.22	51.84	64.80	204.39	
17		503.76	87.76	64.80	71.65	51.84	64.80	238.96	
18		184.96	87.76	64.80	71.65	[illegible]	64.80	120.16	
19		[illegible]	89.93	64.80	71.65	[illegible]	64.80	291.60	
20		297.38	89.93	64.80	71.45	[illegible]	64.80	208.05	9913

Jan 1898

1063.76

21		89.93	89.93	64.80	71.65	51.84	64.80	25.13	
22		89.93	89.93		71.65	51.84	64.80	25.13	9963
23		63.13	89.93		71.65	51.84	21.67		
24		66.93	89.93		69.06	51.84	17.87		
25		—	89.93		63.96	51.84	64.80		
26		46.93	89.93		63.76	51.84	17.87		
27		66.93	89.93		61.84	51.84	(8.07)		
28		35.93	89.93		67.65	51.84	39.67		
29		35.53	89.93	V	62.03	51.84	61.27		
30	129.59	46.56	87.76	64.80	58.49	51.84	20.24 / 261.40		9702
1		1.36	87.76	64.80	60.05	[illegible]	63.44		
2		[illegible]	87.76		60.05	[illegible]	20.24		
3		[illegible]	87.76		67.93	[illegible]	20.24		
4		[illegible]	87.76		62.93	[illegible]	20.24		
5		[illegible]	87.76		67.93		9.44		
6		58.49	85.19		63.93	[illegible]	.81		
7		42.39	85.19		60.83		22.44		9545
8		[illegible]	85.19		61.09		64.80	23.79	9566
9		[illegible]	85.19		67.97		11.61		9584
10		71.79	85.19	64.80			64.80	9.99	9566

11	23.19	85.59	64.80	65.83	57.84	11.61	–	
12	18.60	83.40	[illegible]	62.61	57.84	46.20	–	9506
13	83.40	83.40		68.03	57.84	64.80	18.60	9525
14	–	83.40		62.13	57.84	64.80	–	
15	40.28	83.40	64.80	60.24	57.84	24.60	–	
16	62.59	83.40	64.80	60.04	57.84	81.00		
17	45.64	81.14		59.71	57.84	23.16		
18	2.52	81.14		68.98	57.84	62.76		
19	[illegible]	81.14		57.57	57.84	62.76		
20	–	74.07		58.45	57.84	64.80		9201
21	140.84	81.14		52.87	57.84	64.80	56.04	9257
22	59.07	79.07		52.35	57.84	25.33		
23	57.27	79.07		67.65	57.84	5.53		
24	57.22	77.03		72.40	57.84	7.57		9219
25	490.01	82.61		76.26	57.84	64.80	355.21	9574
26	604.39	85.59		76.36	57.84	64.80	364.59	
27	521.43	87.92		78.87	57.84	64.80	457.13	
28	715.31	71.11		81.65	57.84	64.80	653.57	
29	646.70	74.38		80.61	57.84	64.80	403.90	

[illegible]

30		[illegible]	[illegible]	↓	76.37	[illegible]	64.80	216.70	
31	138.03	117.70	96.30	64.80	75.33	[illegible]	64.80	52.90 / 2148.73	11,722
1		82.60	96.30	64.80	74.38	[illegible]	64.80	17.80	
2		166.50	96.30		74.38	[illegible]	64.80	99.70	
3		83.60	[illegible]		72.74	[illegible]	64.80	17.80	
4		[illegible]	96.30		73.36	[illegible]	64.80	17.80 / 153.1	11,875
5		35.80	[illegible]		76.37	[illegible]	29.00	–	11,846
6		70.90	96.30		78.45	[illegible]	64.80	6.10	
7		70.70	96.30		81.65	[illegible]	64.80	6.10	11,858
8		17.30	96.30		83.83	[illegible]	17.30	–	11,841
9		165.00	[illegible]		81.65	[illegible]	64.80	41.20	
10		70.90	[illegible]		77.46	[illegible]	64.80	6.10	
11		70.90	96.30		[illegible]	[illegible]	64.80	6.10 / 153.4	11,894
12		24.40	[illegible]		[illegible]	[illegible]	40.70		
13		120.60	96.30		75.77	[illegible]	52.40		
14		35.80	96.30	↓	[illegible]	[illegible]	29.00		
15		24.40	96.30	64.80	[illegible]	[illegible]	40.70 ✓ / 162.3		11,731

August 1898

		[illegible]	94.30	64.80	[illegible]	57.84	20.70	—	11731
		[illegible]	94.30	64.80	[illegible]	57.84	52.40	—	
	137.66	[illegible]	94.30	64.80	[illegible]	57.84	29.00 / 102.10	—	11629
		—							

June 1902

1902

	132.50								10,374
10		0.70	94.30	64.80	88.04	57.84	64.10	—	
11		12.40	94.30	64.80	88.04	57.84	52.40	—	10,257
12		94.30	94.30	64.80	88.04	57.84	64.80	29.50	10,287
13		—	94.30	64.80	81.65	51.84	64.80	—	
14		24.10	94.30	64.80	79.49	57.84	40.70	—	
15		—	94.30	64.80	81.65	51.84	64.80	—	
16		8.30	94.30	64.80	81.65	57.84	56.50		
17		—	94.30	64.80	79.49	51.84	64.80		
18		—	94.30	64.80	80.61	57.84	64.80 57.4		9931
19		72.70	94.30	64.80	81.65	57.84	64.80	7.90	9939
20		7.90	94.30	64.80	79.49	51.84	56.90	—	
21		—	94.30	64.80	79.49	57.84	64.80	—	

Aug 1902

22		29.50	94.30	64.80	77.49	57.82	35.30	—	
23		7.70	94.30	64.80	78.45	57.84	56.90	—	
24		7.90	94.30	64.80	77.33	57.82	56.90	—	
25		5.71	92.11	64.80	78.45	57.82	59.09	—	
26		—	89.93	64.80	74.39	57.82	64.80	—	
27		39.12	85.62	64.80	71.45	57.83	25.68	—	
28		39.47	79.67	64.80	60.05	57.83	25.33	—	
29		—	49.75	64.80	37.57	57.84	64.80	—	
30	128.12	20.05	49.75	64.80	37.50	57.84	64.75 555.25	—	9,384 ✓
1		.25	49.75	64.80	37.50	57.84	64.55	—	
2		10.15	49.75	64.80	37.50	57.84	54.65	—	
3		29.75	68.86	64.80	44.06	57.84	34.85	—	
4		29.26	68.86	64.80	52.36	57.84	35.54	—	
5		29.26	68.56	64.80	67.65	57.84	135.54	—	9,159 ✓
6		148.06	68.86	64.80	70.50	57.84	64.80	83.26	
7		148.06	68.86	64.80	72.60	57.84	64.80	83.26	
8		227.26	68.86	64.80	71.45	57.84	64.80	162.46 328.78	9488 ✓

9	187.66	68.86	64.80	71.45	57.84	64.80	122.86	9488
10	58.66	68.86	64.80	79.49		64.80	23.86	
11	79.66	68.86	64.80	79.49		64.80	10.86	
12	112.06	68.86	64.80	79.49		64.80	47.26	
13	122.86	68.86	64.80	79.49		64.80	58.06	
14	241.16	68.36	64.80	82.77		64.80	176.36	
15	490.06	68.86	64.80	85.86	57.84	64.80	425.26	10353
							864.52	
16	853.87	79.07	64.80	85.88	57.84	64.80	789.07	
17	925.87	79.07	64.80	85.88		64.80	861.07	
18	532.67	79.07	64.80	85.88		64.80	467.87	
19	331.07	79.07	64.80	84.61		64.80	266.27	
20	192.47	79.07	64.80	75.34		64.80	127.67	
21	129.47	79.07	64.80	72.40		64.80	64.67	
22	104.27	79.07	64.80	68.60		64.80	39.47	
23	79.07	79.07	64.80	67.65		64.80	14.27	
24	91.67	79.07	64.80	73.75		64.80	26.87	
25	89.93	89.93	64.80	78.45		64.80	25.13	13035
							[illegible]	

26		52.13	89.93	64.80	77.33		12.67	—	
27		52.13	89.93	64.80	77.33		12.67	—	
28		14.33	89.93	64.80	82.77		50.47 75.01	—	12,959 ✓
29		115.13	89.93	64.80	88.04		64.80	50.33	
30	✓	152.93	89.93	64.80	88.04		64.80	88.13	
31	143.56	152.93	89.93	64.80	85.88	51.84	64.80	88.13	13,186 ✓
								226.57	
1		190.73	89.93	64.80	85.88	51.84	64.80	125.93	
2		140.33	89.93	64.80	83.61		64.80	75.53	
3		102.53	89.93	64.80	79.49		64.80	37.73	
4		89.93	89.93	64.80	78.65		64.80	25.13	
5		77.33	89.93	64.80	77.33		64.80	12.53	13,463 ✓
								276.85	
6		52.13	89.93	64.80	81.65		12.67	—	
7		52.13	89.93	64.80	79.49		12.67	—	
8		43.90	94.30	64.80	83.81		20.90	—	
9		31.30	94.30	64.80	82.77		33.50	—	
10		43.90	94.30	64.80	78.45		20.90	—	
11		31.30	94.30	64.80	81.65	51.84	33.50 ✓	—	13,329

August 1962

August 1902

12		31.30	94.30	64.80	82.77	57.84	33.50	—		
13		18.70	94.30	64.80	79.49		46.10	—		
14		18.70	96.30	64.80	83.81		46.10	—		
15		18.70	96.30	64.80	83.81		46.10	—		
16		9.59	85.59	64.80	83.81		54.81	—		
17		22.59	85.59	64.80	83.81		42.21	—		
18	142.96 (136.35)	22.59	83.59	64.80	83.81	57.84	62.21 / 311.83	—	13,018	Lake would have been higher than actual owing to rises having been made on May 28th onward in 1902
	+124.70								8651	

1905

10	29.95	49.75	64.80	35.51	57.84	34.85	—		
11	20.05	49.75	64.80	31.79		49.75	—		
12	—	49.75	64.80	28.94		64.80	—		
13	10.15	49.75	64.80	26.96		54.65	—		
14	10.15	49.75	64.80	31.79		54.65	—		
15	.25	49.75	64.80	30.84		64.55	—		
16	—	49.75	64.80	33.70		64.80	—		
17	20.05	49.75	64.80	37.50		44.75	—		
18	29.95	49.75	64.80	69.46		19.80 / 417.60	—		8203
19	99.25	49.75	64.80	62.03		49.75		49.50	

1935 June	20		545.08	59.03	64.80	53.38		59.03	486.05	
	21		386.40	51.60	64.80	49.77		54.18	332.22	
	22		192.00	51.60	64.80	46.22		58.62	133.38	
	23		202.80	51.60	64.80	50.98		52.67	150.13	
	24		202.60	51.60	64.80	58.49		51.60	151.00	
	25		137.60	51.60	64.80	60.05		51.60	86.00	
	26		105.35	51.60	64.80	63.94		51.60	53.75	
	27		224.25	51.60	64.80	65.84		51.60	172.65	
	28		402.60	51.60	64.80	81.65		51.60	351.00	
	29		487.73	89.93	64.80	79.49		64.80	422.93	
	30	134.77	378.47	98.67	64.80	85.88	51.84	64.80	313.67	109.05
									2702.24	
July 1935	1		225.47	98.67	64.80	83.84	51.84	64.80	260.67	
	2		199.47	98.67	64.80	83.87		64.80	134.67	
	3		149.07	98.67	64.80	81.65		64.80	84.27	
	4		86.07	98.67	64.80	81.65		64.80	21.27	
	5		73.47	98.67	64.80	80.61		64.80	8.67	114.15
									509.55	
	6		60.87	98.67	64.80	76.38		3.93		
	7		61.73	89.93	64.80	75.34	51.84	.07	—	114.11

8	26.93	89.93	64.80	81.65	57.84	37.87	–	11411
9	26.93	89.93		78.45		37.87	–	
10	39.53	89.93		78.45		25.27	–	
11	39.53	89.93		79.49		25.27	–	
12	27.88	89.93		77.33		36.92	–	
13	8.38	89.93		77.33		56.42	–	
14	31.68	89.93		77.33		33.12	–	
15	43.33	89.93		77.33		21.47	–	
16	17.88	89.93		79.49		46.92	–	
17	31.43	89.93		78.45		33.37	–	
18	8.03	89.93		81.65		56.77 111.27	–	11000
19	66.53	89.93		79.49		64.80	1.73	
20	101.63	89.93		79.49		64.80	36.83	
21	195.23	89.93		90.62		64.80	130.43	
22	480.43	89.93		88.04		64.80	415.63	
23	530.93	89.93		84.84		64.80	466.13	
24	329.33	89.93		82.77		64.80	264.53	
25	178.13	89.93		83.81		64.80	113.33	
26	140.33	89.93		80.61		64.80	75.53	
27	89.93	89.93		79.49		64.80	25.13	

[illegible]

28		89.93	89.93		77.33		64.80	25.13 / 1554.40	12554
29		64.73	89.93		77.33		.07	–	–
30		77.33	89.93	V	80.61	V	64.80	12.53	12567
31	141.29	64.73	89.93	64.80	79.49	57.84	.07	–	12567
1		64.73	89.93	64.80	84.84	51.84	.07	–	12567
2		77.33	89.93		80.61		64.80	12.53	12580
3		52.13	89.93		82.77		12.67	–	
4		39.53	89.93		78.45		25.27	–	
5		39.53	89.93		79.49		25.27	–	
6		39.53	89.93		77.33		25.27	–	
7		14.33	89.93		75.34		50.47	–	
8		14.33	89.93		71.45		50.47	–	
9		26.93	89.93		71.45		37.87	–	
10		1.73	89.93		71.45		63.07	–	
11		26.93	89.93		77.49		37.87	–	
12		39.53	89.93		78.45		25.27	–	
13		14.33	89.93		77.33		50.47	–	
14		26.93	89.93	V	75.34	V	37.87	–	
15		4.58	89.93	64.80	75.34	51.54	60.22	–	12078

August 1905	16		31.68	89.93	64.80	74.39	57.84	33.12	—	12078
	17		31.68	89.93	64.80	78.45	57.84	30.12	—	
	18	139.09	43.03	89.93	64.80	78.49	57.84	21.47	—	✓ 11990
		[illegible]						87.71		
		134.15								
		120.35								

1906.

									7789
10	—	—	64.80	—	57.84	64.80	—		
11	—	—	64.80	—	57.84	64.80	—		
12	—	—	64.80	—	57.84	64.80	—		
13	—	—	64.80	—	57.84	64.80	—		
14	9.90	—	64.80	—	57.84	54.90	—		
15	—	—	64.80	—	57.84	64.80	—		
16	9.90	—	64.80	—	57.84	54.90	—		
17	29.70	—	64.80	—	57.84	35.10	—		
18	39.60	—	64.80	—	57.84	25.20	—	7295	
19	155.01	26.31	64.80	—	57.84	64.80	90.21		
20	147.94	39.04		29.89		64.80	83.14		
21	207.46	68.86		38.97		64.80	142.66		
22	78.76	68.86		46.22		64.80	13.96		
23	78.76	68.86		43.37		64.80	13.96	7639	
24	58.96	68.86		41.52		5.84	343.93		
25	19.36	68.86		39.57		45.44	—		

June 1906

26		29.26	68.86		39.57		35.54	—	
27		49.06	68.86		39.14		15.74	—	
28		55.53	64.93		35.51		59.27	—	
29		19.43	59.03		31.79		45.37	—	
30	118.16	20.05	49.75	64.80	29.29	51.84	64.75	—	7387
			721.08	1360.80			251.95		
1		14.67	44.37	64.80	27.91	51.84	50.13	—	
2		2.97	42.57		28.74		61.93	—	
3		—	39.04		27.91		64.80	—	
4		17.49	37.29		26.01		47.31	—	
5		15.75	35.55		26.01		49.05	—	
6		14.00	33.80		25.14		50.80	—	
7		23.90	33.80		25.14		40.70	—	
8		43.70	33.80		24.28		21.10	—	
9		55.35	35.55		26.01		9.45	—	
10		57.09	37.29		27.91		7.71	—	6984
							1409.18		
11		70.48	40.78		29.89		64.80	5.68	
12		72.28	42.58		29.46		64.80	7.48	6997
13		42.58	42.58	64.80	32.74	51.84	22.22	—	6975

Jan 1946

14		30.88	40.78	64.80	33.70	57.84	32.57	—	
15		30.56	40.78		35.51		30.31	—	69.12
16		60.8	40.78		40.69		54.72	5.86	69.18
17		40.78	40.78		44.06		9.72	—	69.08
18		52.48	42.58		53.81		42.58	9.90	
19		294.59	66.89		90.83		64.80	229.79	
20		687.73	64.93		53.51		64.80	622.93	
21		606.89	66.89		85.28		64.80	542.09	
22		413.44	89.94		84.41		64.80	348.64	
23		281.51	92.11		81.65		64.80	216.71	
24		326.11	92.11		77.23		64.80	261.31	
25		150.61	92.11		75.74		64.80	85.81	
26		162.31	92.11		79.49		64.80	97.57	
27		117.70	94.30		80.96		64.80	52.90	
28		164.50	94.30		80.18		64.80	99.70	
29		199.60	94.30		81.65		64.80	134.80	
30		141.10	94.30		31.79		64.80	76.30	
31	129.76	117.70	94.30	64.80	29.29	57.84	64.80	52.90	97.39
			1633.29	2008.8				2831.27	

August 1916

1		106.60	94.30	64.80	27.91	57.84	64.80	41.20	
2		94.30	94.30		28.94		64.80	29.50	
3		70.90	94.30		27.91		64.80	6.10	
4		82.60	94.20		26.01		64.80	17.80	
5		82.60	94.30		26.01		64.80	17.80	9851
6		47.50	94.30		27.91		17.30	—	
7		—	—		25.14		33.38	—	
8		—	—		24.28		34.45	—	
9		—	—		26.01		32.29	—	9734
10		46.80	—		27.91		29.91	16.89	
11		163.80	—		29.89		27.40	136.40	
12		70.20	—		29.46		27.97	42.23	
13		93.60	—		32.74		23.87	69.73	
14		69.90	—		33.70		22.67	47.23	
15		104.85	—		35.51		20.41	84.44	
16		108.65	—		40.69		13.94	94.71	
17		75.60	—		44.06		9.72	65.88	
18	132.57 (135.9)	100.80	—	64.80	83.87	5-	—	100.80	10392 (11,185) Diff. 793 [illegible]
			565.80	1166.40				658.51	

[illegible] 1908

					1908				
	+124.8								8610
10		–	50.06	64.80	52.36	51.84	50.06	–	
11		.56	50.06		50.98		50.54	–	
12		19.36	68.86		55.38		45.44	–	
13		41.31	80.91		73.35		23.49	–	
14		61.74	91.44		68.60		3.06	–	
15		61.74	91.44		60.05		3.06	–	
16		51.84	91.44		60.05		12.96	–	
17		32.04	91.44		60.05		32.76	221.48 –	8449
18		101.34	91.44		68.17		64.80	36.54	
19		184.96	95.86		68.60		64.80	120.16	8,606
20		51.84	91.44		63.94		12.96	–	
21		9.44	78.74		56.94		55.36	–	
22		53.19	74.99		53.74		9.61	–	
23		39.13	68.83		55.38		25.67	–	
24		45.97	65.77		46.22		18.83	–	
25		43.37	63.17		45.19		21.43	–	
26		40.36	60.36		49.77		22.39	–	
27		60.36	60.36		69.46		24.24	190.49 –	8416
28		135.07	65.77		68.60		64.80	70.27	
29		156.22	87.02		73.35		64.80	91.52	
30	124.82	160.74	91.44	64.80	71.45	51.84	64.80	95.94	8674

Aug 1908

1	160.56	101.16	64.80	69.46	57.84	64.80	95.76	
2	111.06	101.16		79.34		64.80	46.26	
3	101.06	101.16		65.84		64.80	36.26	
4	81.36	101.16		65.84		64.80	16.56	
5	66.16	95.86		56.94		64.80	1.36	
							146.20	88.70
6	61.74	91.44		58.94		3.06		
7	43.28	82.88		56.94		21.52	—	
8	35.39	74.99		45.19		29.41	—	
9	29.23	68.83		45.19		35.57	—	
10	29.23	68.83		48.47		35.57	—	
11	22.57	63.17		44.75		41.23	—	
12	40.56	60.26		45.19		24.24	—	
13	37.92	57.72		42.94		27.88	—	
14	35.24	55.04		42.94		29.56	—	
15	42.61	52.51		42.87		21.56	—	
16	52.51	52.51		42.96		11.12 20.72	—	85.89
17	97.32	57.72		44.75		64.80	32.52	
18	92.87	63.17		56.69		63.17	28.07	
19	68.43	68.83		91.93		64.80	43.63	
20	274.06	95.66		97.98		64.80	219.26	
21	237.95	109.25		97.98		64.80	173.15	
22	311.01	112.11	64.80	102.12	57.84	64.80	246.21	93.22
							742.84	

23		317.31	112.11	64.80	102.12	57.84	64.80	252.51	
24		266.02	114.82		118.97		64.80	201.22	
25		309.22	114.82		111.28		64.80	244.42	
26		363.22	114.82		100.65		64.80	298.42	
27		254.82	114.82		94.26		64.80	190.02	
28		224.86	95.86		84.84		64.80	160.06	
29		191.99	74.99		74.39		64.80	127.19	
30		156.89	74.99	✓	74.39	✓	64.80	142.09	
31	135.[illegible]	110.09	74.99	64.80	76.38	57.84	64.80	55.29	11.003
								1671.22	
1		98.40	75.00	64.80	78.45	57.84	64.80	33.60	
2		121.80	75.00		83.81		64.80	57.00	
3		180.30	75.00		100.65		64.80	115.50	
4		318.16	95.86		103.57		64.80	253.36	
5		283.06	95.86		92.62		64.80	218.26	
6		212.86	95.86		102.12		64.80	148.06	
7		212.36	95.86		95.36		64.80	147.56	
8		165.76	95.86		100.65		64.80	100.96	
9		130.81	95.86		95.38		64.80	66.01	
10		132.71	95.86		96.63		64.80	67.91	122.11

[illegible]

June 1960

11		132.66	95.86		85.45		64.80	67.86	
12		108.46	95.86		83.45		64.80	43.66	
13		108.46	95.86		83.81		64.80	43.66	
14		83.26	95.86		79.06		64.80	18.46	
15		83.26	95.86		78.02		64.80	18.46	
16		70.66	95.86		75.34		64.80	5.88	12,409
17		58.06	95.86	✓	74.39	✓	6.74	[illegible]	12402
18	140.71 (134.90)	72.56	95.86	64.80	76.28	57.84	64.80	7.76	12,410

12445

1960

8007

10	—	—	64.80	—	57.84	64.80	—	
11	9.90	—	64.80	—	57.84	54.90	—	
12	—	—	64.80	—	57.84	64.80	—	
13	19.80	—	64.80	—	57.84	45.00	—	
14	9.90	—	64.80	—	57.84	54.90	—	
15	9.90	—	64.80	—	57.84	54.90	—	
16	9.90	—	64.80	—	57.84	54.90	—	
17	9.90	—	64.80	—	57.84	54.90	—	
18	9.90	—	64.80	—	57.84	54.90	—	
19	—	—	64.80	—	51.84	64.80	—	7438
						568.80		

20		149.76	97.86	64.80	33.70	57.84	64.80	44.96	1450
21		76.07	95.97		63.63		64.80	11.97	7494
22		30.16	49.90		24.62		34.64	–	7459
23		85.55	26.15		19.18		64.80	21.75	
24		164.75	26.15		24.28		60.60	104.15	
25		263.75	26.15		27.91		56.66	207.69	
26		361.73	57.53		68.60		57.53	304.20	
27		161.39	74.99		54.69		64.80	96.59	
28		118.19	74.99		55.99		64.80	53.39	
29	✓	76.94	66.14	↓	45.19	✓	64.80	12.14	8259
30	122.66	52.38	63.18	64.80	62.94	51.84	12.74	772.91	8246
1		41.58	63.18	64.80	43.63	51.84	23.22	–	
2		30.78	63.18		46.22		348.02	[illegible]	
3		41.58	63.18		44.08		23.22	–	8166
4		138.78	63.18		46.22		64.80	73.98	
5		171.18	63.18		56.94		63.18	108.00	
6		322.38	63.18		58.49		63.18	259.20	
7		257.58	63.18		56.94		63.18	194.40	
8		267.83	63.18		60.05		63.18	204.65	

Aug 1910

9		157.93	63.18		58.49		63.18	96.75	
10		121.68	63.18		55.99		63.18	58.50	
11		74.88	63.18		49.77		64.80	10.08	9172
12		63.18	63.18		46.22		1.62		
13		63.18	63.18		47.35		1.62	—	
14		63.18	63.18		8.47		1.62	—	
15		2.66	49.46		40.26		61.27	—	
16		24.29	47.69		48.99		26.96	—	
17		36.94	47.69		35.94		27.66	—	
18		26.19	47.69		36.89		38.61	—	
19		26.19	47.69		34.65		38.61	—	
20		26.19	47.69		35.57		38.61	—	
21		15.44	47.69		45.62		40.02		
22		10.48	31.98		45.62		29.27	—	8866
23		79.89	26.15		33.70		48.82	31.07	
24		69.16	26.15		30.84		52.40	16.75	
25		81.79	26.15		24.80		57.95	21.87	
26		108.05	26.15		24.80		59.75	48.10	
27		84.65	26.15		26.61		57.69	26.96	
28		72.95	26.15		41.13		39.54	33.41	
29		96.35	26.15		32.40		50.45	45.90	
30		193.29	52.89		67.65		52.59	140.40	9404
31	128.49	297.18	63.18	64.80	65.84	5784	63.18	234.00	

1		308.88	63.18	64.84	61.26	51.84.	63.18	245.70	9464
2		261.38	63.18		55.38		63.18	198.20	
3		233.88	63.18		55.38		63.18	170.70	
4		365.38	63.18		78.02		63.18	302.40	
5		478.98	63.18		77.33		63.18	415.80	
6		585.18	63.18		73.01		63.18	522.00	
7		333.18	63.18		67.65		63.18	270.00	
8		198.18	63.18		58.49		63.18	135.00	
9		198.18	63.18		58.49		63.18	135.00	
10		157.68	63.18		56.33		63.18	94.50	
11		103.68	63.18		53.22		63.18	40.50	
12		117.68	63.18		52.98		64.26	53.42	
13		90.28	63.18		50.98		64.26	26.02	12073
14		63.18	63.18		48.99		1.62	—	12071
15		90.28	68.18		50.19		66.80.	25.48	12096
16		63.18	63.18		48.04		1.62	—	12094
17		90.28	63.18		43.37		66.80	25.48	12119
18	139.6 ~~142.60~~	64.17	64.17	64.80	50.46	51.84.	.63	—	12118 X diff.

[illegible]
+143.30

~~[illegible]~~
13109

[illegible]

1911

June 1911

	124.10	5	6					85-32
10	149.34	40.44	64.80	37.50	51.84	58.39	91	
11	511.52	29.72		49.35		32.96	779	
12	881.62	24.02		38.10		41.20	840	
13	386.72	24.02		27.91		53.93	333	
14	199.12	24.02		21.34		62.12	137	
15	163.52	24.02		18.06		64.80	99	
16	95.62	24.02		15.72		64.80	35	
17	84.34	33.94		20.04		64.80	20	
18	65.64	40.44		55.38		40.44	25	
19	242.04	40.44		56.94		40.44	202	
20	544.44	40.44		60.95		40.44	504	
21	659.64	40.44		69.12		40.44	619	
22	1005.44	40.44		72.40		40.44	1005	
23	465.44	40.44		64.71		40.44	425	
24	271.64	40.44		45.79		48.00	224	
25	186.44	40.44		46.66		46.91	140	
26	158.04	40.44		42.94		51.54	107	
27	128.64	40.44		38.10		57.62	71	
28	92.64	48.09		44.06		57.81	31	
29	97.24	52.69		50.98		53.26	44	
30	167.43 — 67.54	12.69	64.84	49.77	51.84	[illegible]	17	142.79

Aug 1911

1	147.43	37.84	52.69	66.80	48.67	51.84	19.56 ✓	—	[illegible]	
2		47.75	47.75		44.06		9.72 ✓	—		
3		37.84	52.69		44.50		20.02 ✓	—		
4		37.84	52.69		45.79		22.41 ✓	—	14204 ✓ X	
5		52.69	52.69		52.86		—	—		
6		82.39	52.69		50.98		53.75	29		
7		82.39	52.69		48.47		56.90	26		
8		97.26	52.69		50.98		53.76	44		
9		186.34	52.69		50.98		53.76	133		
10		173.49	52.69		53.22		52.69	121		
11		158.39	52.69		58.49		52.69	106		
12		281.69	52.69		78.88		52.69	229	14892	
13		1271.31	90.86		79.49		64.80	1207	15662	437
14		469.64	108.61		79.49		64.80	405		405
15		352.86	108.61		79.49		64.80	288		288
16		1018.82	108.61		82.08		64.80	954		954
17		978.25	108.61		87.00		64.80	914		914
18		868.79	108.61		82.08		64.80	804		804
19		1164.14	108.61		77.49		64.80	1100		1100
20		463.48	108.61	✓	77.33	✓	64.80	399		399
21		671.45	77.18	64.80	80.61	51.84	64.80	607		607

22		472.40	76.40	64.80	80.61	51.84	64.84	408		408
23		405.05	76.40		80.61		64.84	360		360
24		407.22	76.40		87.00		64.80	343		343
25		314.53	76.40		79.49		64.80	250		250
26		222.59	76.40		81.65		64.84	158		158
27		122.45	76.40		80.61		64.80	58		58
28		322.42	76.40		81.22		64.80	258		258
29		146.78	76.40		87.17		64.80	82		82
30		240.17	76.40	✓	82.34	✓	64.88	176		176
31	+152.00	156.46	76.40	64.80	79.49	51.84	64.80	92		92 ✓
			2319.25	2005.8						
1		60.90	76.40	64.80	78.88	51.84	3.90	–	15658	
2		91.90	76.40		78.02		64.80	27	15662	23 ✓
3		45.40	76.40		74.39		19.40	–		
4		60.90	76.40		73.01		3.90	–		
5		60.90	76.40		71.28		3.90	–		
6		45.40	76.40		74.09		19.40	–		
7		49.92	96.42	✓	78.45	✓	16.88	– [illegible]	15601 ✓	
8		77.81	108.61	64.80	96.68	51.84	64.85	12.84	15614 ✓	

			888.45	518.40					15614
9		62.11	108.61	64.80	95.90	51.84	2.69	—	
10		62.11	108.61		94.26		2.69	—	15609
11		77.61	108.61		93.13		64.80	13	15622
12		47.21	108.61		89.34		17.59	—	
13		32.11	108.61		88.04		32.69	—	
14		47.41	108.61		88.81		17.39	—	
15		32.11	108.61		88.04		32.69	—	
16		32.51	108.61		88.81		22.29	—	
17		✓ 18.01	108.61	Y	87.00	Y	46.79	—	
18	151.14	18.01	108.61	64.80	88.30	51.84	46.79	—	15,396 ✓
	(14.9.30)		1949.53	1166.00			326.23		
	1285.53				1913				8818
10		91.60	–	64.80	–	51.84	43.20 ✓	—	
11		21.60	–		–		43.20 ✓	—	
12		43.20	–		–		21.60 ✓	—	8710 ✓
13		108.00	–		–		64.80	43.20	
14		86.40	–		–		64.80	22.40	8776 ✓
15		42.20	–		–		21.60	—	
16		32.40	–		–		32.40 ✓	—	

June 1913

17		43.20	–		–		21.60	–			
18		10.80	–		–		54.00	–			
19		10.80	–		–		54.00	–			
20		10.80	–		–		54.00	–			
21		10.80	–		–		54.00	–			
22		10.80	–		–		54.00	–			
23		10.80	–		–		54.00	–			
24		32.40	–		–		32.40	–			
25		47.41	15.01		–		17.39 ✓	–			
26		13.22	24.02		–		51.58 ✓	–			
27		20.36	31.16		17.37		44.44	–			
28		23.07	33.87		24.28		41.72	–			
29		12.82	34.42		24.28	↓	51.98 ✓	–			
30	120.95	8.04	40.44	64.80	70.96	51.84	32.40 ✓	–		8104 ✓	
			178.92	1360.80			671.52				

July 1913

1		18.84	40.44	64.80	62.81	51.84	21.60 ✓	–			
2		8.04	40.44	↓	70.50	↓	32.40 ✓	–		8050 ✓	
3		78.27	2.67		72.98		38.74 ✓	39.53			
4		75.60	–	64.80	1071	51.84	51.41 ✓	24.19 ✓		8114 ✓	
			83.55	259.20				63.72			

A 8 1913

5	90.31	36.31	64.80	26.01	51.84	64.80	26	8114 8140
6	51.24	60.44		34.04		11.45	—	
7	30.58	52.18		47.35		27.31	—	
8	31.09	52.69		47.78		26.67	—	8075
9	74.29	52.69		65.19		61.00	13.29	
10	63.49	52.69		45.19		61.00	2.49	
11	60.49	52.69		43.63		62.05	.54	8091
12	52.69	52.69		44.50		9.17	—	
13	41.89	52.69		44.76		19.65	—	
14	31.09	52.69		45.19		29.91	—	
15	31.09	52.69		57.84		21.60	—	8011
16	74.29	52.69		82.24		52.69	21.60	
17	474.69	52.69		89.34		52.69	422.00	
18	1198.29	52.69		80.61		52.69	1145.60	
19	902.09	52.69		74.91		52.69	869.40	
20	413.29	52.69		70.50		52.69	390.60	
21	349.69	52.69		59.10		52.69	297.00	
22	214.69	52.69		52.36		52.69	162.00	
23	160.69	52.69		47.78		57.76	102.93	
24	106.69	52.69	64.80	48.47	51.84	56.90	49.79	

25		93.19	52.69		48.99		56.25	36.94	
26		93.19	52.69		44.76		61.54	31.65	
27		52.69	52.69		42.63		10.26	—	
28		90.19	52.69		49.25		55.92	37.26	
29		93.19	52.69		56.33		52.69	40.50	
30		120.34	52.69		90.63		52.69	67.65	
31	139.20	395.04	52.69	64.80	74.39	51.84	52.69	342.35	12018
			1477.04	2000.50					
1		420.19	52.69	64.80	61.26	51.84	52.69	367.50	
2		253.79	52.69		49.25		55.93	197.86	
3		168.29	52.69		46.22		59.71	108.58	
4		125.79	52.69		46.66		59.16	66.03	
5		87.40	57.99		50.98		59.06	28.34	
6		119.71	60.91		57.49		61.35	58.36	
7		85.94	71.26		62.04		64.80	21.14	
8		76.40	76.39		68.60		64.80	11.60	12877
								869.41	
9		46.99	76.39		69.47		17.81	—	
10		32.39	76.39		59.44		32.51	—	
11		2.74	61.29	64.80	51.49	51.84	58.99	—	12768

Aug 1913

12		17.56	60.91	64.80	52.88	51.84	43.35	12760	
13		17.56	60.91		49.25		46.57		
14		17.56	60.91		46.22		47.24		
15		32.01	60.91		48.47		32.79		
16		17.56	60.91		48.47		47.24		
17		32.01	60.91		51.84		28.70		
18	140.92	8.83	80.68	64.80	83.38	51.84	55.97	12466	Diff. ~~[illegible]~~ 1369 m.c.ft
	(145.90)		1137.50	1186.40			302.08	(13,835)	

Aug 7 1972

Rev. Dept.

Secretary's remarks dated 30-6-15 on page 19 of notes to G.O., No.1524 Rev. dated 30-6-15.

"Issue at once in manuscript as now verbally amended and then print before taking up the -- Editor's table question".

To Under Secy.

The G.O. has been despatched. A printed copy with notes is submitted below for orders as to placing the G.O. on the Editor's table. The order of the Hon'ble Mr. Gillman's deputation on special duty was placed on the Editor's table.

At page 18 of the notes to G.O., No.1524 Revenue, dated 30-6-15, the Secretary remarked that a press communique might be issued. It is submitted that the G.O. may be issued as a communique omitti the portions enclosed in square brackets in pencil.

(Ind) KLK
11-8-15.

This may be done.

(Ind) AHAT.
12-8-15.

Sec.

A I agree to this provided G.O., No.273-I, dated 4-6-15 can simultaneously be placed on the E.T. It is referred to in para 5 of G.O.1524 Rev. dated 30-6-15 and it is useless letting that para go out if the papers referred are not also published.

D.
13-8-15.

P.W.(I) U.O. for favour of remarks.

P.W.D.(I)

D.I.

P.W.D.,(I) may agree with Revenue that

G.O., No.1524 Rev. dated 30-6-15 (order only) may be issued as a Press communique.

2. With reference to portion marked A above, the order only in G.O., No.273-I, dated 4-6-15 may if approved, be placed on E.T.

G.V.
14-8-15.

F.E.M.
16-8-15.

I agree.

W.M.E.
16-8-15.

PUBLIC WORKS DEPT. IRRIGATION
6305/15 A
13 AUG 1915
No. 4820/15
GOVERNMENT OF MADRAS

Rev. U.O.

M.E.D.

for necessary action with reference to para 2 above

G.V.
17.8.15

Attender. Please print the orgl of G.O. no 273 I dt 4-6-15

21-8-15

final

M.E.D.

A note to Press to strike off 100 copies of the order only of G.O. no 273 I dt 4-6-15 is put up below for appl. The necessary entry in the Communications at the bottom of the original of the order has been made

21-8-15

P.V.S.
21-8-15

DESPATCHED
Date 25/8
Enclos.

N.V.G.

[illegible]

abstract

2 Monthly tables drawn on the p. 6 [illegible]

Year 1	Half month 2		Demand on the Reservoir for Irrigation Mills cft 3	Water available for storage Mills cft 4	Balance in the Reservoir Mills cft 5	~~Surplus~~ Level of Lake Mills cft 6	Actual Level of Lake	Balance in Reservoir ~~Storage~~ in [illegible] for [illegible] col 7	Extra Draw-off due to [illegible] in col 3 M. c. ft
	Lake level + 122.20				8195.20				
1898	June	13-15	168.48	967.57	8984.29	126.27			
		16-30	972.00	1874.22	9886.51	130.42			
	July	1-15	972.00	705.74	9620.25	129.22			
		16-31	1036.80	3323.87	11907.32	138.77			
	August	1-15	972.00	981.60	11916.92	138.81			
		16-18	194.40	72.30	11794.82	138.32	131.05	10034.70	-1760
	Lake level 130.45				9874.20				
1902	June	13-15	194.40	24.10	9724.00	129.70			
		16-30	972.00	238.55	8990.55	126.30			
	July	1-15	842.40	1944.37	10092.52	131.30			
		16-31	984.96	3869.94	12977.50	142.81			
	August	1-15	972.00	942.91	12948.41	142.71			
		16-18	194.40	56.17	12809.18	142.19	136.35	11298.20	-1511

G.O. M. 293 P. / 4-6-15

Year 1	Half month 2	Demand on the Reservoir for Irrigation in Mill. cft 3	Water available for storage Mill. cft 4	Balance in the Reservoir Mill. cft 5	Level of Lake ~~Surplus~~ 6	Actual level of Lake 7	Balance in reservoir in Millions cft for level in Col 7	Extra Draw-off due to errors in Col 3 Mill. cft
	Lake level 123.95			8502.1				
	June 13-15	194.40	20.55	8328.25	123.07			
	June 16-30	881.28	3414.08	10861.05	134.58			
1905	July 1-15	972.00	1202.34	11092.39	135.53			
	July 16-31	1023.84	2436.53	12505.08	141.06			
	August 1-15	972.00	482.40	12015.48	139.20			
	August 16-18	194.40	106.69	11927.77	138.85	134.15	10759.95	−1168
	Lake level 120.35			7789.30	120.35			
	June 13-15	194.40	9.90	7604.80	119.36			
	June 16-30	972.00	948.75	7581.55	119.23			
1906	July 1-15	972.00	492.02	7101.57	116.57			
	July 16-31	972.00	3817.63	9947.20	130.68			
	August 1-15	855.36	1033.05	10124.89	131.43			
	August 16-18	155.52	285.05	10254.12	131.99	135.90	11184.80	+ 930

Year	Half month	Demand on the Reservoir for Irrigation mill cft	Water available for storage mill cft	Balance in the Reservoir mill cft	Level of Lake	Actual level of lake	Balance in reservoir in mill cft	Extra Draw-off due to rises in Cols m. c. ft.
1	2	3	4	5	6	7	8	
	Lake level + 123.80			8472.40	123.80			
1908	June 13-16	194.40	164.79	8442.79	123.64			
	June 16-30	946.08	1148.37	8645.08	124.67			
	July 1-16	972.00	899.07	8572.15	124.30			
	July 16-31	984.96	3368.57	10955.76	134.99			
	August 1-15	881.28	2372.32	12446.80	140.85			
	August 16-18	194.40	201.22	12453.62	140.87	134.90	10934.70	-1519
	Lake level + 121.60			8036.8	121.60			
1910	June 13-15	194.40	39.60	7882.00	120.82			
	June 16-30	946.08	1530.36	8466.28	123.77			
	July 1-15	972.00	1820.44	9314.72	127.80			
	July 16-31	920.16	1249.04	9643.60	129.32			
	August 1-15	920.16	3586.26	12309.70	140.34			
	August 16-18	194.40	217.63	12332.93	140.43	143.30	13109.30	+ 777

F.S L of lake + 152.00
Capacity at FSL
15662 mil. cft

		...lance in the Reservoir mil. cft	Level of Lake ~~Surplus~~	actual level of lake	Balance in reservoir in millions cft	Extra Draw-off due to mines in [illegible] m. c. ft.
	...[illegible]	M5	M6	7	8	
		10643.10				
	749.66	11211.32	136.01			
...56	4208.78	14564.74	148.39			
...32.12	3367.70	15662.00	152.00			
...94.24	7975.00	15662.00	152.00			Surplus 1339.32 7080.76
...46.08	553.60	15569.52	151.70			
...4.40	68.53	15443.65	151.30	149.30	14834.60	609
		9012.60				
...1.40	237.60	9055.60	126.60			
...9.04	297.72	8394.28	123.41			
...0.16	741.95	8216.07	122.51			
...0.16	4885.19	12181.70	139.86			
...	1503.63	12725.69	141.88			
		12602.65	141.43	145.90	13835.5	-123.7

24.4.67/57